VIRGINIA DROUGHT MONITORING TASK FORCE
Drought Status Report
September 21, 2023

Summary

On Thursday September 21, 2023, the Virginia Drought Monitoring Task Force (DMTF) met to discuss the drought indicators identified by the Virginia Drought Assessment and Response Plan. Surface and groundwater indicators have not shown improvements throughout the past fourteen-day period, with near record low observations at some stations within the Northern Virginia and Shenandoah drought evaluation regions. The Task Force recommends maintaining the Drought Watch declaration for the Eastern Shore, Northern Virginia, and York James evaluation regions.

Due to continued declines in drought indicators and reported impacts to agriculture and public water supplies, the Task Force recommends maintaining the Drought Warning declaration within the Shenandoah drought evaluation region. The Task Force will continue closely monitoring drought indicators and will meet on October 10, 2023.

The DMTF reviewed the status of drought monitoring and hydrologic conditions in the Commonwealth of Virginia. Precipitation over the past 30-60 day period showed localized events within the central and southern portions of the state. Precipitation percent of normal over the recent seven and 14-day period show exceptional dryness focused within Shenandoah Valley and the majority of Virginia below historical averages. Area-averaged rainfall since the beginning of the current water year (October 1, 2022) has remained below long-term normal values for the Eastern Shore drought evaluation region. Precipitation for the Eastern Shore is within the 79th percentile (See DEQ website for more info on drought indicators).

Streamflow over the past 14-day period has remained stable with no significant improvements throughout regions impacted by drought conditions. Flows are currently below the 25th percentile for three of the 11 drought evaluation regions including; Northern Virginia Shenandoah, and Roanoke. Two regions are currently ranked within "Warning" including the Shenandoah and Northern Piedmont with streamflow observed below the 10th percentile. Note localized streamflow within some areas of the Shenandoah drought evaluation regions are below the 5th percentile, specifically near the Mount Jackson and Strasburg portions of the watershed.

Groundwater levels for monitoring wells in the Climate Response Network have shown continued declines within many northern, central, and eastern portions of the state. Seven of 11 drought evaluation regions are below the 25th percentile including the Big Sandy, Eastern Shore, Middle James, Northern Virginia, Shenandoah, Roanoke, and York-James. Levels are currently below the 10th percentile for four of 11 drought evaluation regions including the Northern Virginia, Roanoke, Shenandoah, and York James.

Storage at major water supply reservoirs throughout Virginia remain within normal ranges at this time, with exception of the Skidmore Fork Lake (Switzer Lake) located within the Shenandoah drought evaluation region reported below normal. The City of Harrisonburg continues to report withdrawals and reservoir conditions daily. The most recent weekly U.S. Drought Monitor (USDM) web page map for Virginia (Appendix A, released September 19, 2023) showed abnormally dry (D0) conditions mapped across approximately 63% of the Commonwealth, and moderate drought (D1) conditions mapped across approximately 26% of the Commonwealth. Severe drought (D2) conditions mapped across approximately 9% of the Commonwealth. Appendix B includes presentations from the United States Geological Survey and National Weather Service.

Reports:

The U.S. Army Corps of Engineers (USACE) reported that Lake Moomaw (Philpott Lake) and J. H. Kerr Reservoir have received below normal inflows over the past month. As Philpott hydropower units remain out of service, USACE continues coordinating with fisheries experts to maintain sufficient releases at Philpott to support downstream aquatic life. Currently, Kerr Reservoir is approximately 1.0ft below guide curve, and dropping approximately a third of a foot per week. Power generation is operating at minimum weekly energy, with inflows approximately 1000cfs less than minimum energy releases. The USACE will continue to generate minimum energy as long as the reservoir level is below guide curve to conserve power pool storage.

The DEQ report presents a map of current conditions of DEQ Drought Indicators, and summary of current conditions at the four large multi-purpose reservoirs listed as key reservoir storage indicators in the Virginia Drought Assessment and Response Plan (All remain above drought watch levels at this time).

Virginia Department of Agriculture and Consumer Services

Producers in the Northern and Valley regions of the Commonwealth report that yields for numerous crops, including soybeans, corn, and direct market crops, are below average. Pasture conditions continue to be poor in these regions and pond and stream levels are below normal.

Producers in Southwest Virginia report pond and stream levels are slightly below normal and crop yields are expected to be average to slightly below average due to previous periods of extreme heat.

Producers in the Northeastern region of the Commonwealth and on the Eastern Shore report that soybean seed size is smaller than normal due to the dry conditions in these regions.

As widespread impacts to producers throughout the Commonwealth have been experienced information regards assistance programs was provided by VDACS. Information regarding the U.S. Department of Agriculture's Disaster Assistance Programs is available here: https://www.fsa.usda.gov/programs-and-services/disaster-assistance-program/index.

Information regarding the federal disaster declaration process is available here: https://www.fsa.usda.gov/Assets/USDA-FSA-Public/usdafiles/FactSheets/emergency_disaster_designation_declaration_process-factsheet.pdf

Contact information for each locality's USDA Farm Service Agency office can be found by clicking-through the map available here: https://offices.sc.egov.usda.gov/locator/ap

Virginia Department of Environmental Quality

Conditions of Major Drought Indicator Reservoirs
Four large multi-purpose reservoirs are identified as drought indicators in the Virginia Drought Assessment and Response Plan. Below is a snapshot of reported conditions at these reservoirs and the subsequent table provides status of reservoirs used to monitor drought conditions.

Smith Mountain Lake on the Staunton River in the Roanoke drought evaluation region was at an adjusted elevation of 793.72 feet, which is .72feet above Watch level (793 ft). The adjusted elevation is the level the lake would be if the water currently held in the lower Leesville Lake for reuse were pumped back into Smith Mountain Lake. Recent 7,14, and 28-day inflows were normal for this time of year.

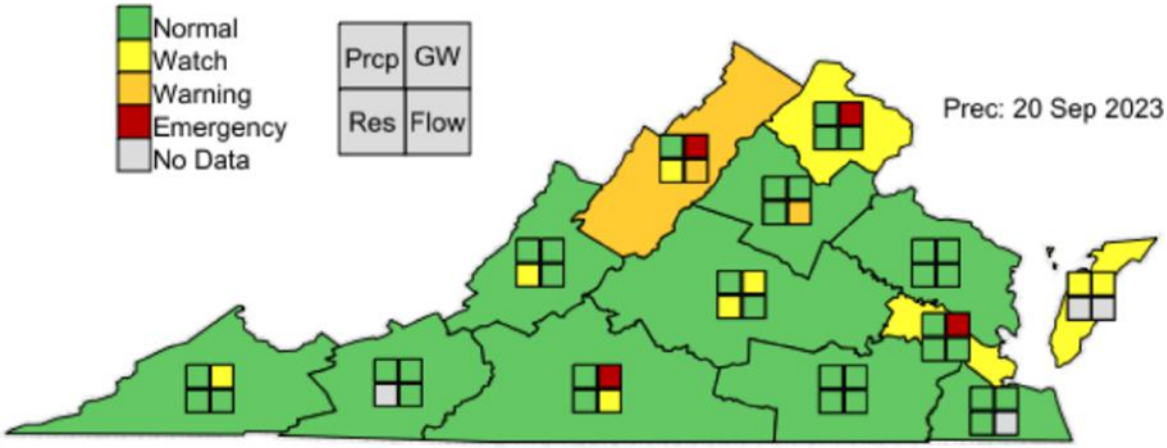
Lake Moomaw at Gathright Dam on the Jackson River in the Upper James drought evaluation region was reported at an elevation of 1564.24 feet, which is .76 feet below Watch level (1565 ft). Recent 7, 14, and 28-day average inflows were below normal for this time of year.

Lake Anna on the North Anna River in the Northern Piedmont drought evaluation region was reported at an elevation of 249.2 feet, which is 1.2 feet above Watch level (248 ft). 7 and 14 day inflows were below normal for this time of year.

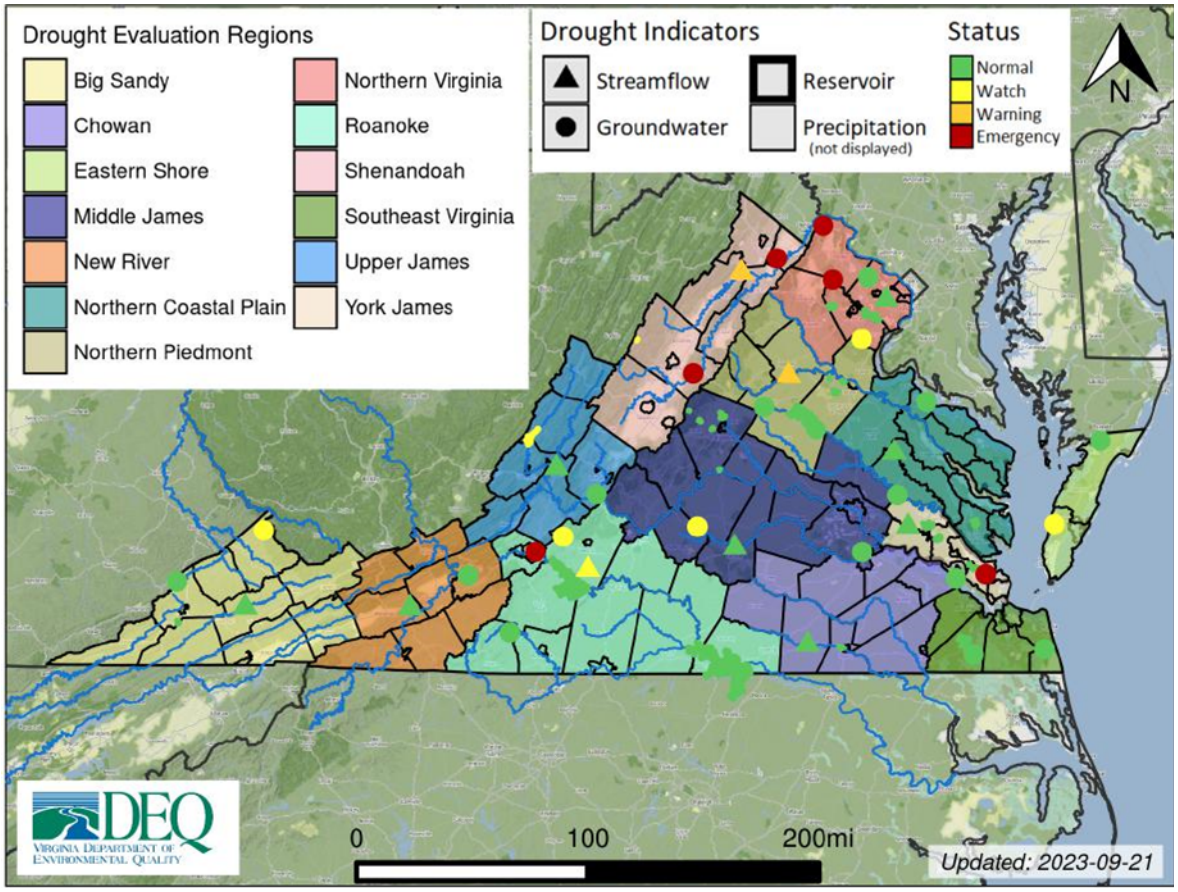
J. H. Kerr Reservoir on the Staunton River in the Roanoke drought evaluation region was reported at an elevation of 298.57 ft, which was 0.93ft below the guide curve elevation for this time period (299.50 feet) and 2ft above the Watch level (Watch level is 3 to 6 ft below guide curve). Recent 7, 14, and 28-day inflows were below normal for this time of year.

DEQ Daily Drought Status Summary: 09/21/2023

Drought Summary Map:



Drought Indicator Map:



Regional Drought Response:

#	Region	Reduction Type	Target Reduction %
1	Shenandoah	voluntary	5-10%
2	Eastern Shore	none	none
3	Big Sandy	none	none
4	Upper James	none	none
5	Roanoke	none	none
6	Southeast Virginia	none	none
7	Northern Coastal Plain	none	none
8	New River	none	none
9	Middle James	none	none
10	Chowan	none	none
11	York James	none	none
12	Northern Virginia	none	none
13	Northern Piedmont	none	none

Precipitation Indicators:

#	Region	Start Date	End Date	Water Year % of Normal	Status
1	Eastern Shore	10/1/2022	9/20/2023	79.99	Watch
2	Northern Piedmont	10/1/2022	9/20/2023	88.62	Normal
3	Shenandoah	10/1/2022	9/20/2023	90.37	Normal
4	Northern Coastal Plain	10/1/2022	9/20/2023	92.05	Normal
5	Northern Virginia	10/1/2022	9/20/2023	93.39	Normal
6	Big Sandy	10/1/2022	9/20/2023	93.61	Normal
7	Southeast Virginia	10/1/2022	9/20/2023	95.72	Normal
8	York James	10/1/2022	9/20/2023	99.95	Normal
9	Middle James	10/1/2022	9/20/2023	100.46	Normal
10	Roanoke	10/1/2022	9/20/2023	101.36	Normal
11	Upper James	10/1/2022	9/20/2023	104.94	Normal
12	Chowan	10/1/2022	9/20/2023	106.24	Normal
13	New River	10/1/2022	9/20/2023	107.42	Normal

Surface Water Indicators:

#	Region	Gage Name	Start Date	End Date	Percentile	Status
1	Northern Piedmont	RAPIDAN RIVER NEAR CULPEPER, VA	9/14/2023	9/20/2023	7.44	Warning
2	Shenandoah	N F SHENANDOAH RIVER NEAR STRASBURG, VA	9/14/2023	9/20/2023	7.45	Warning
3	Roanoke	GOOSE CREEK NEAR HUDDLESTON, VA	9/14/2023	9/20/2023	24.71	Watch
4	York James	CHICKAHOMINY RIVER NEAR PROVIDENCE FORGE, VA	9/14/2023	9/20/2023	30.07	Normal
5	Upper James	COWPASTURE RIVER NEAR CLIFTON FORGE, VA	9/14/2023	9/20/2023	37.56	Normal
6	Chowan	MEHERRIN RIVER NEAR LAWRENCEVILLE, VA	9/14/2023	9/20/2023	44.83	Normal
7	Northern Coastal Plain	MATTAPONI RIVER NEAR BEULAHVILLE, VA	9/14/2023	9/20/2023	45.44	Normal
8	Northern Virginia	ACCOTINK CREEK NEAR ANNANDALE, VA	9/14/2023	9/20/2023	45.92	Normal
9	Big Sandy	CLINCH RIVER AT CLEVELAND, VA	9/14/2023	9/20/2023	52.94	Normal
10	New River	REED CREEK AT GRAHAMS FORGE, VA	9/14/2023	9/20/2023	55.81	Normal
11	Middle James	APPOMATTOX RIVER AT FARMVILLE, VA	9/14/2023	9/20/2023	69.25	Normal

Groundwater Indicators:

#	Region	Well Name	Start Date	End Date	Percentile	Status
1	Northern Virginia	Prince William County USGS Observation Well (49V 1)	9/14/2023	9/20/2023	3.18	Emergency
2	Northern Virginia	Harper's Ferry DEQ Observation Well (49Y 1 SOW 022)	9/14/2023	9/20/2023	4.74	Emergency
3	Roanoke	Roanoke-Nelson DEQ Observation Well (31G 1 SOW 008)	9/14/2023	9/20/2023	0.0	Emergency
4	Shenandoah	McGaheysville USGS Observation Well (41Q 1)	9/14/2023	9/20/2023	3.96	Emergency
5	Shenandoah	Blandy Farm USGS Observation Well (46W 175)	9/14/2023	9/20/2023	4.63	Emergency
6	York James	York County DEQ Observation Well (59F74 SOW 184C)	9/14/2023	9/20/2023	4.29	Emergency
7	Big Sandy	Buchanan County USGS Observation Well (15G 19 SOW 222)	9/14/2023	9/20/2023	15.43	Watch
8	Eastern Shore	P. C. Kellam DEQ Observation Well (63H 6 SOW 103A)	9/14/2023	9/20/2023	13.14	Watch
9	Middle James	Buckingham USGS Observation Well (41H 3)	9/14/2023	9/20/2023	25.0	Watch
10	Northern Virginia	Prince William County USGS Observation Well (51S 7)	9/14/2023	9/20/2023	12.5	Watch
11	Roanoke	Bedford County USGS Observation Well (33G 1 SOW 224)	9/14/2023	9/20/2023	21.34	Watch
12	Big Sandy	U.S. Forest Service - SOW 223 Cane Patch Well	9/14/2023	9/20/2023	100.0	Normal
13	Chowan	Slade Farm DEQ Observation Well (57E 31 SOW 094C)	9/14/2023	9/20/2023	55.46	Normal
14	Eastern Shore	Withams DEQ Observation Well (66M 19 SOW 110S)	9/14/2023	9/20/2023	43.85	Normal
15	Middle James	Colonial Heights USGS Observation Well (51G 1)	9/14/2023	9/20/2023	54.91	Normal
16	New River	Christiansburg DEQ Observation Well (27F 2 SOW 019)	9/14/2023	9/20/2023	93.41	Normal
17	Northern Coastal Plain	George Washington Birthplace USGS Observation Well (55P 9)	9/14/2023	9/20/2023	35.96	Normal
18	Northern Piedmont	Gordonsville DEQ Observation Well (45P 1 SOW 030)	9/14/2023	9/20/2023	41.88	Normal
19	Northern Virginia	Fairfax County USGS Observation Well (52V 2D)	9/14/2023	9/20/2023	53.12	Normal
20	Roanoke	Fairystone State Park USGS Observation Well (30C 1 SOW 010)	9/14/2023	9/20/2023	53.72	Normal
21	Southeast Virginia	Pungo DEQ Observation Well (62B 1 SOW 098A)	9/14/2023	9/20/2023	48.39	Normal
22	Southeast Virginia	Brinkley USGS Observation Well (58B 13)	9/14/2023	9/20/2023	28.47	Normal
23	Upper James	Glasgow DEQ Observation Well (35K 1 SOW 063)	9/14/2023	9/20/2023	68.11	Normal
24	York James	Hanover County DEQ Observation Well (53K 19 SOW 080)	9/14/2023	9/20/2023	49.5	Normal

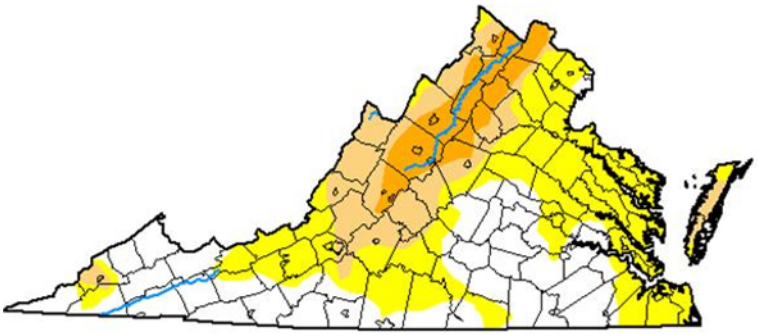
Reservoir Indicators:

Note, these reservoir statuses require manual review as they are NOT automated at this time

#	Region	Reservoir	Date	Status
1	Middle James	Lake Moomaw	09/21/2023	Watch
2	Shenandoah	Skidmore Fork Lake (Switzer Lake)	09/21/2023	Watch
3	Upper James	Lake Moomaw	09/21/2023	Watch
4	Big Sandy	Big Cherry Reservoir	09/21/2023	Normal
5	Chowan	Emporia Reservoir	09/21/2023	Normal
6	Middle James	Sugar Hollow	09/21/2023	Normal
7	Middle James	Beaver Creek Reservoir	09/21/2023	Normal
8	Middle James	Totier Creek Reservoir	09/21/2023	Normal
9	Middle James	South Fork Rivanna River Reservoir	09/21/2023	Normal
10	Middle James	Ragged Mountain	09/21/2023	Normal
11	Northern Coastal Plain	Beverdam Reservoir	09/21/2023	Normal
12	Northern Piedmont	Ni River Reservoir	09/21/2023	Normal
13	Northern Piedmont	Lake Anna	09/21/2023	Normal
14	Northern Piedmont	Motts Run Reservoir	09/21/2023	Normal
15	Northern Piedmont	Hunting Run Reservoir	09/21/2023	Normal
16	Northern Virginia	Occoquan Reservoir	09/21/2023	Normal
17	Northern Virginia	Lake Manassas	09/21/2023	Normal
18	Roanoke	Smith Mountain Lake	09/21/2023	Normal
19	Roanoke	Kerr Reservoir	09/21/2023	Normal
20	Southeast Virginia	Kerr Reservoir	09/21/2023	Normal
21	Southeast Virginia	Lake Cohoon	09/21/2023	Normal
22	Southeast Virginia	Lake Meade	09/21/2023	Normal
23	Southeast Virginia	Lake Kilby	09/21/2023	Normal
24	Southeast Virginia	Speights Run Reservoir	09/21/2023	Normal
25	York James	Harwoods Mill Reservoir	09/21/2023	Normal
26	York James	Lee Hall - City Reservoir	09/21/2023	Normal
27	York James	Little Creek Reservoir	09/21/2023	Normal
28	York James	Diascund Creek Reservoir	09/21/2023	Normal
29	York James	Skiffes Creek Reservoir	09/21/2023	Normal

APPENDIX A

U.S. Drought Monitor
Virginia



September 19, 2023
(Released Thursday, Sep. 21, 2023)
Valid 8 a.m. EDT

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	36.45	63.55	25.86	9.45	0.00	0.00
Last Week 09-12-2023	47.63	52.37	17.97	6.30	0.00	0.00
3 Months Ago 06-20-2023	35.92	64.08	26.19	0.42	0.00	0.00
Start of Calendar Year 01-03-2023	89.75	10.25	0.80	0.00	0.00	0.00
Start of Water Year 09-27-2022	49.02	50.98	16.86	1.52	0.00	0.00
One Year Ago 09-20-2022	65.98	34.02	10.72	1.52	0.00	0.00

Intensity:

- None
- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. For more information on the Drought Monitor, go to https://droughtmonitor.unl.edu/About.aspx

Author:
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NCEI/NOAA

droughtmonitor.unl.edu

APPENDIX B

USGS Drought Status Summary

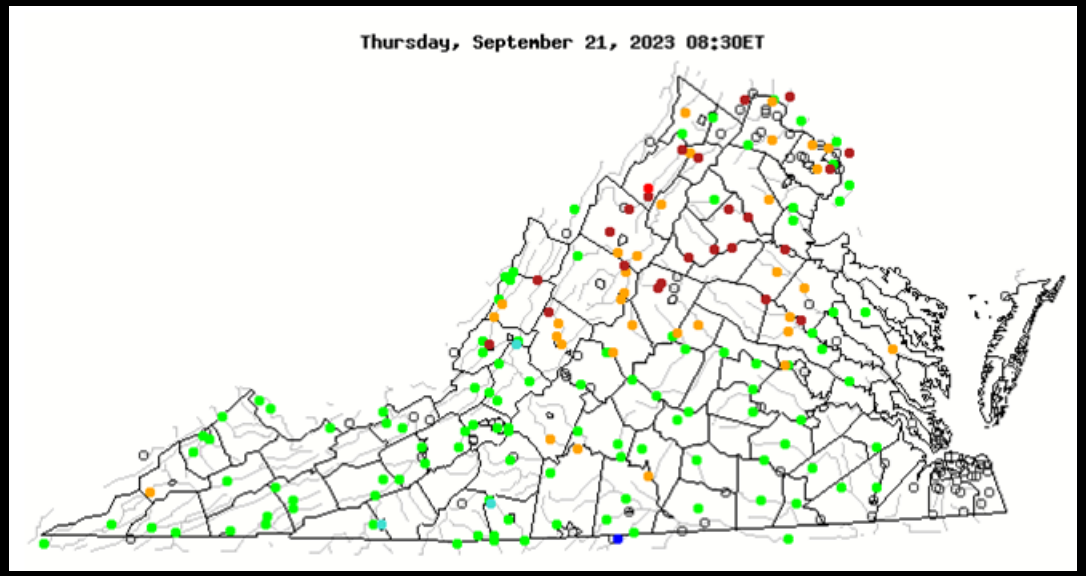
Streamflows and Groundwater Levels in Virginia

Virginia Drought Monitoring Task Force

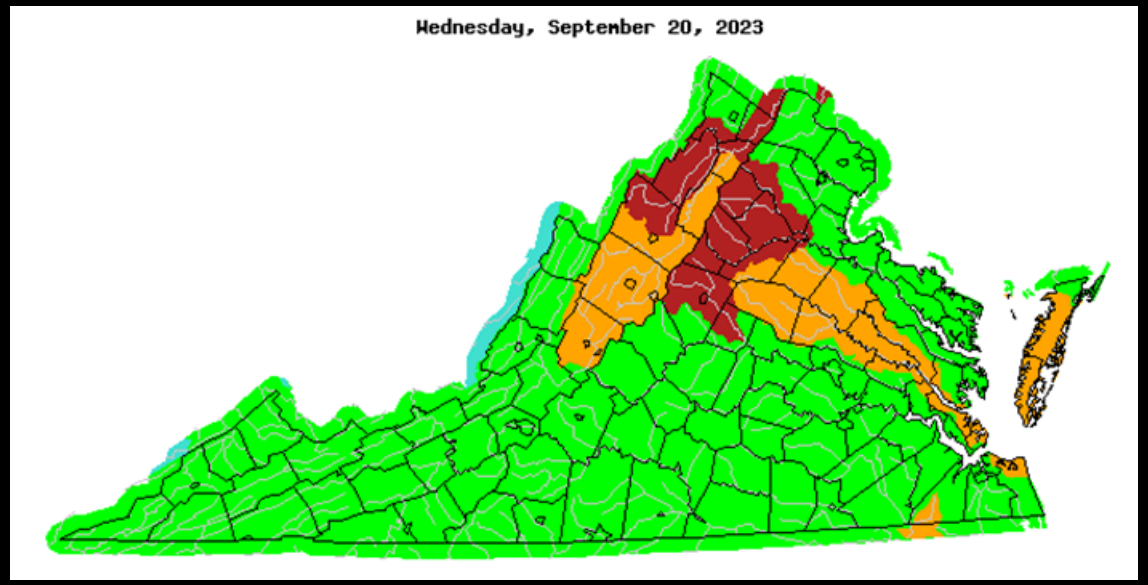
September 21, 2023

U.S. Department of the Interior
U.S. Geological Survey

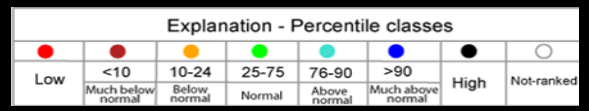
Current Streamflow Conditions

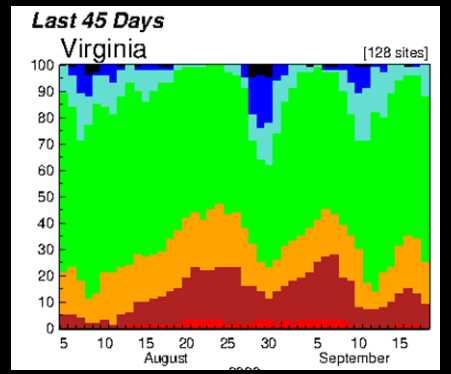


Realtime USGS Streamgages



Daily Flow HUC 8s



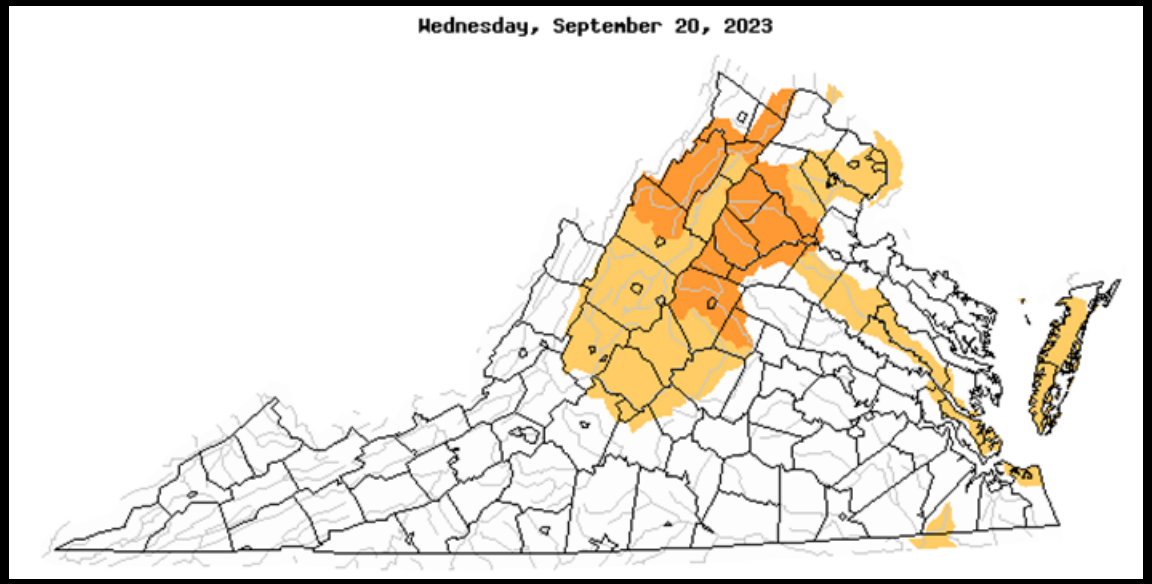


- Data from 09/21/2023
- Low flows persist in north/central Virginia.

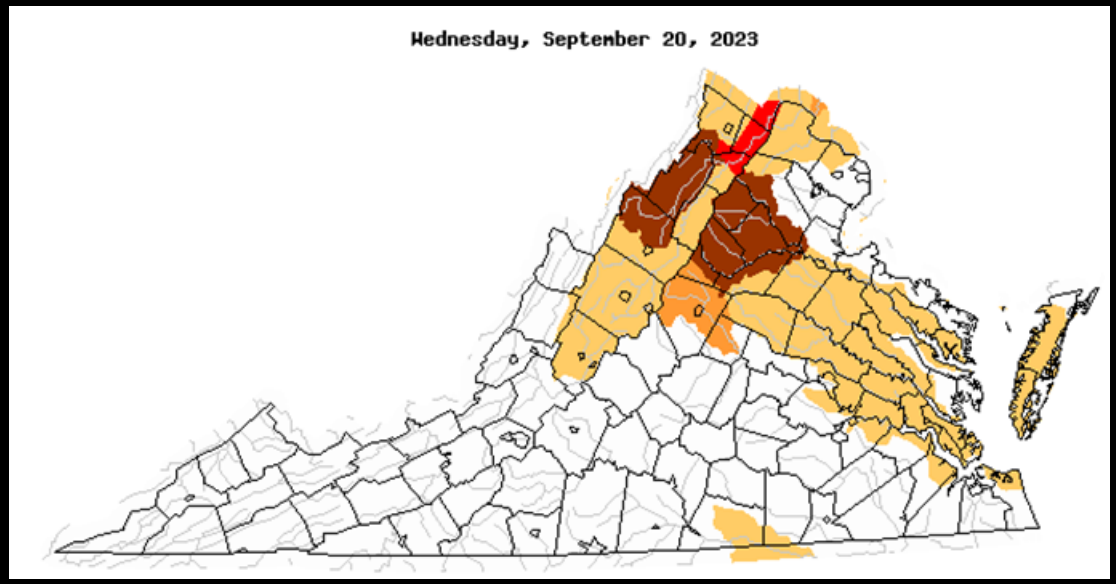
https://waterwatch.usgs.gov/index.php?id=pa01d&sid=w___map|m__pa01d_nwc&r=va

USGS

Below-Normal Streamflow Conditions

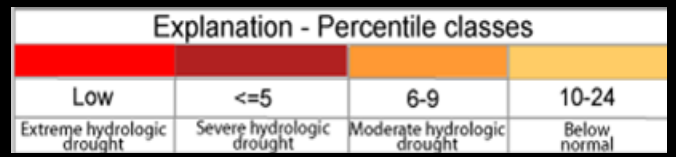


7-Day



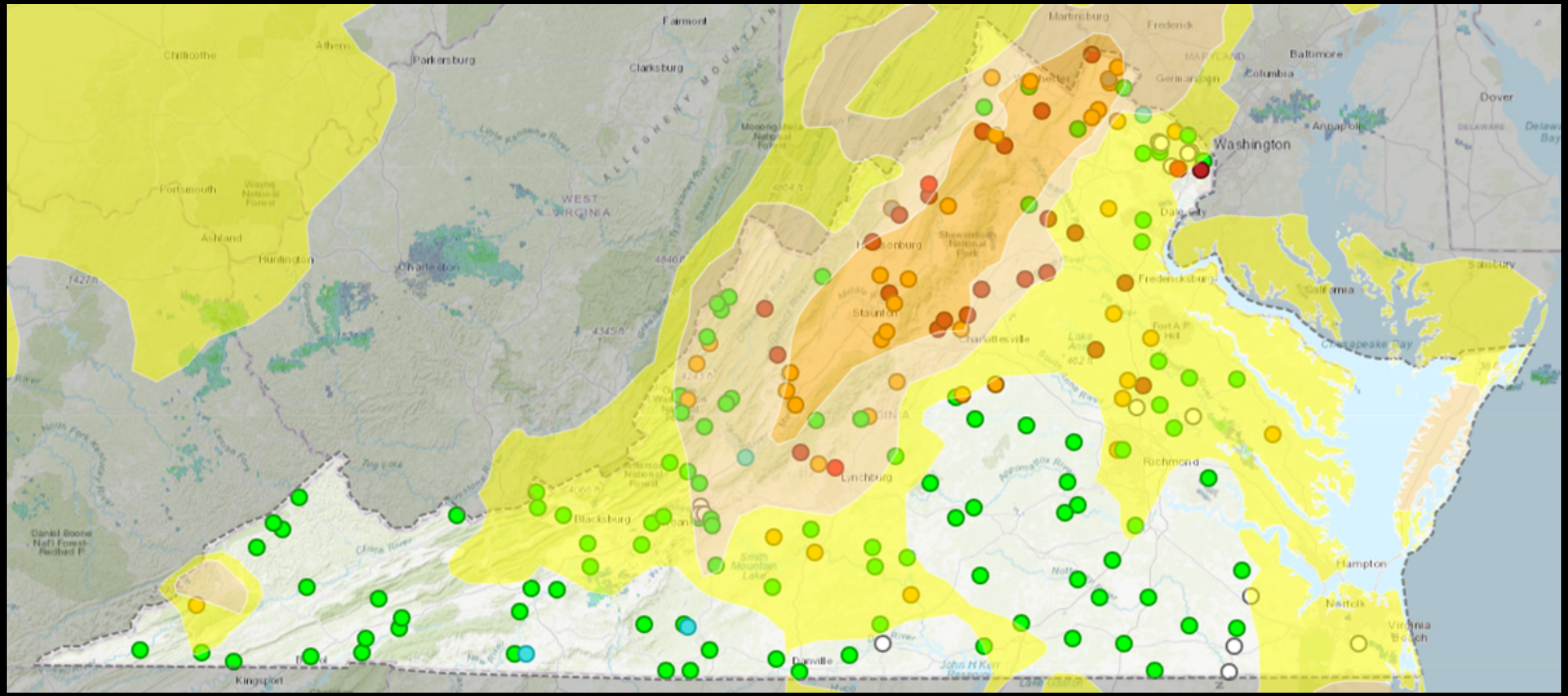
28-Day

- 20% of VA below normal, mostly north and central
- Shenandoah in extreme hydrologic drought (28 day)
- Rapidan/Rappahannock in moderate/severe drought



USGS

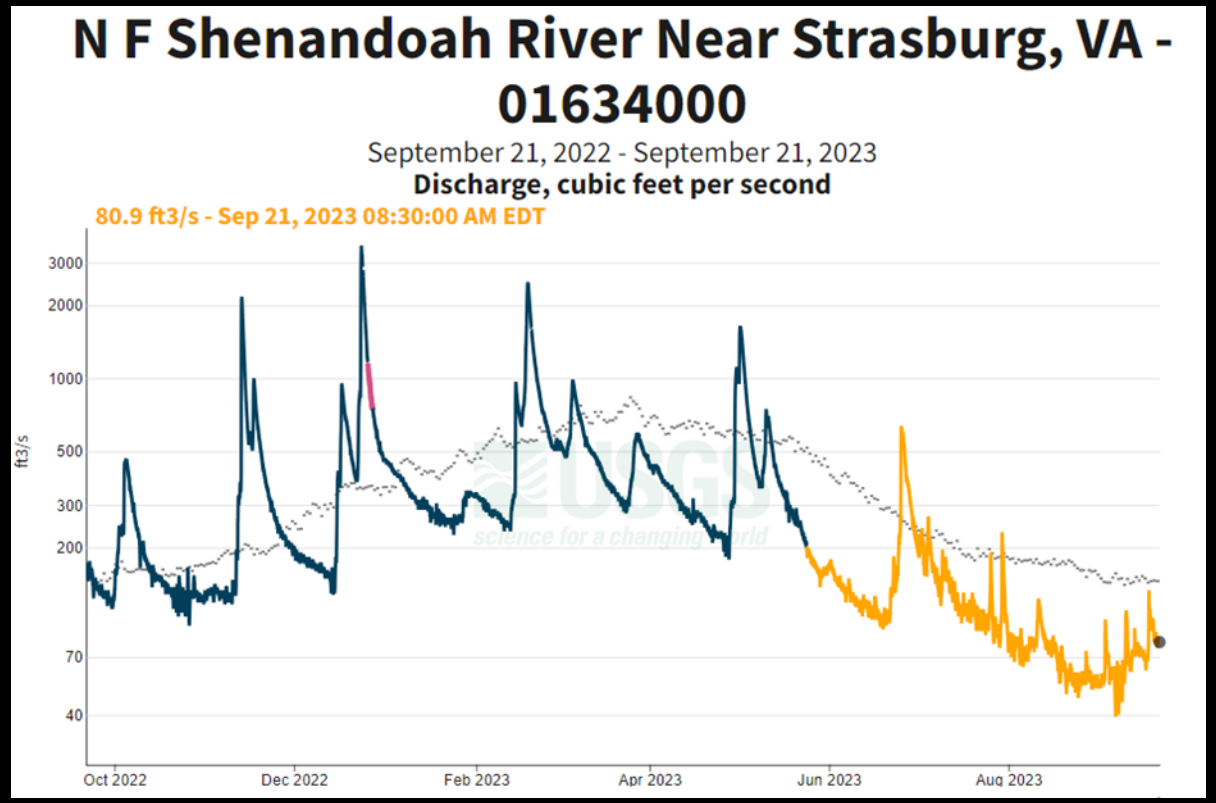
USGS National Water Dashboard

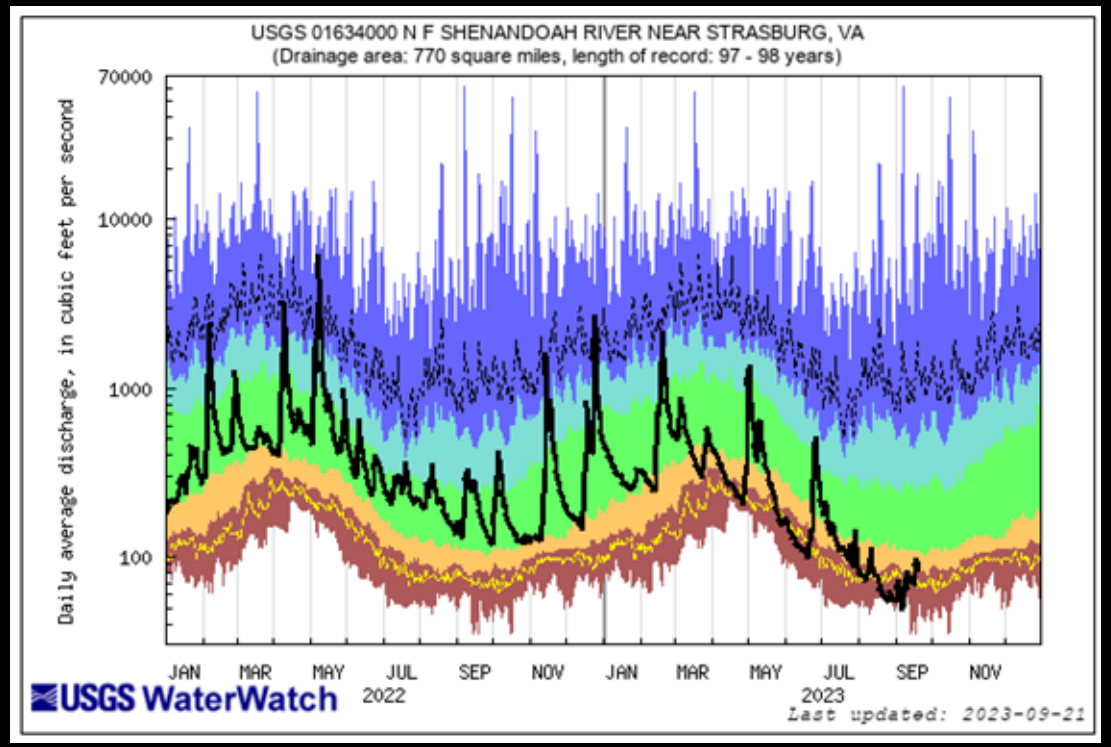


https://dashboard.waterdata.usgs.gov/app/nwd/?region=lower48&aoi=state-va

USGS

Streamflow Conditions for 01634000 NF Shenandoah River at Strasburg, VA

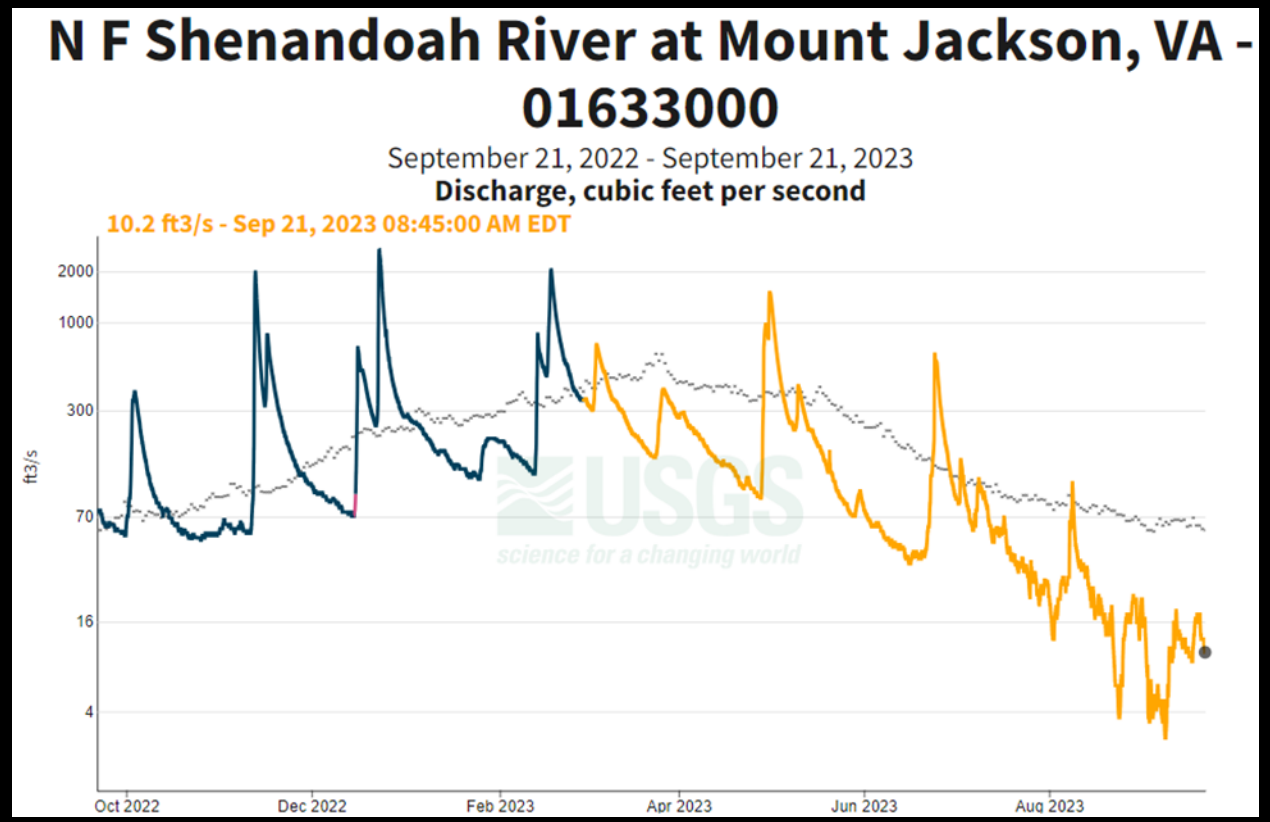


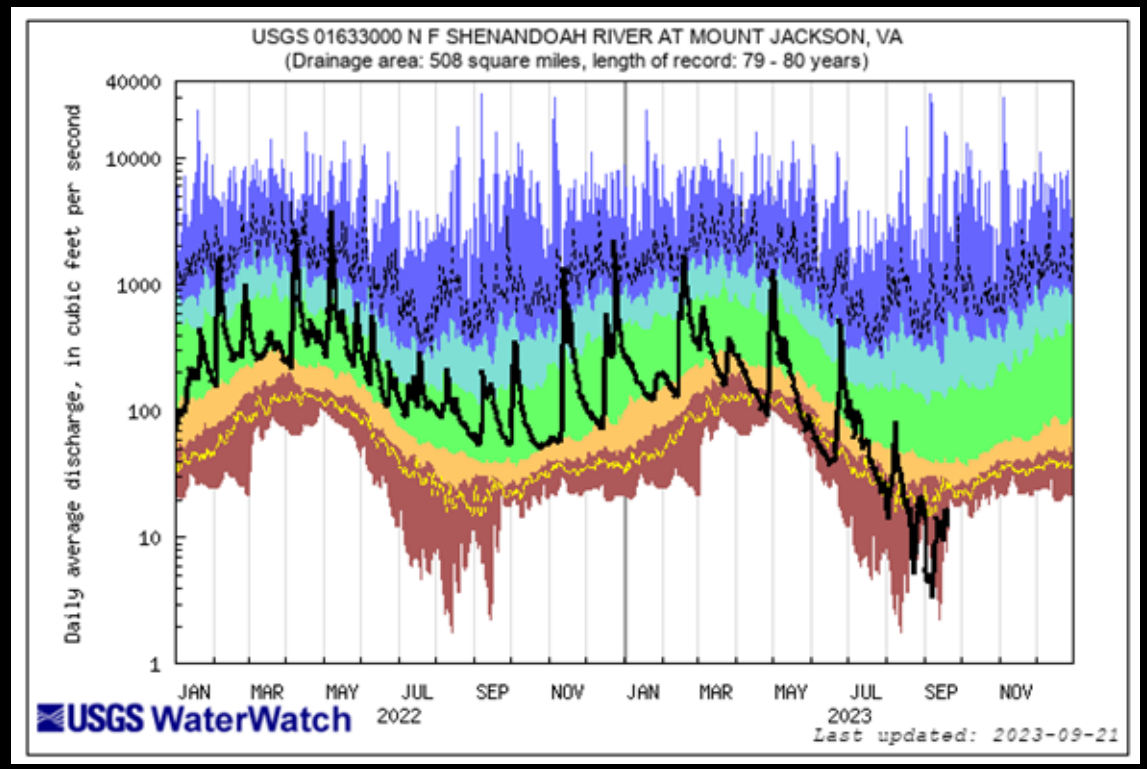


- 770 sq miles
- 98 years of data

USGS

Streamflow Conditions for 01633000 NF Shenandoah River at Mt Jackson, VA

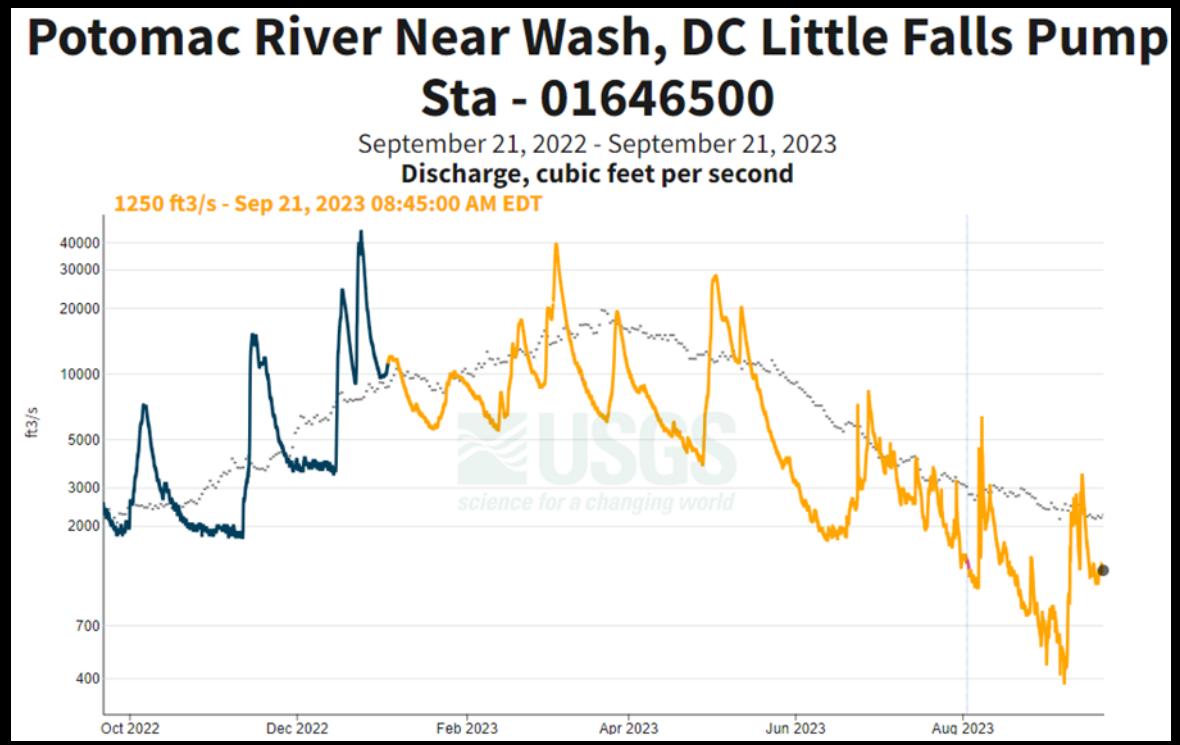


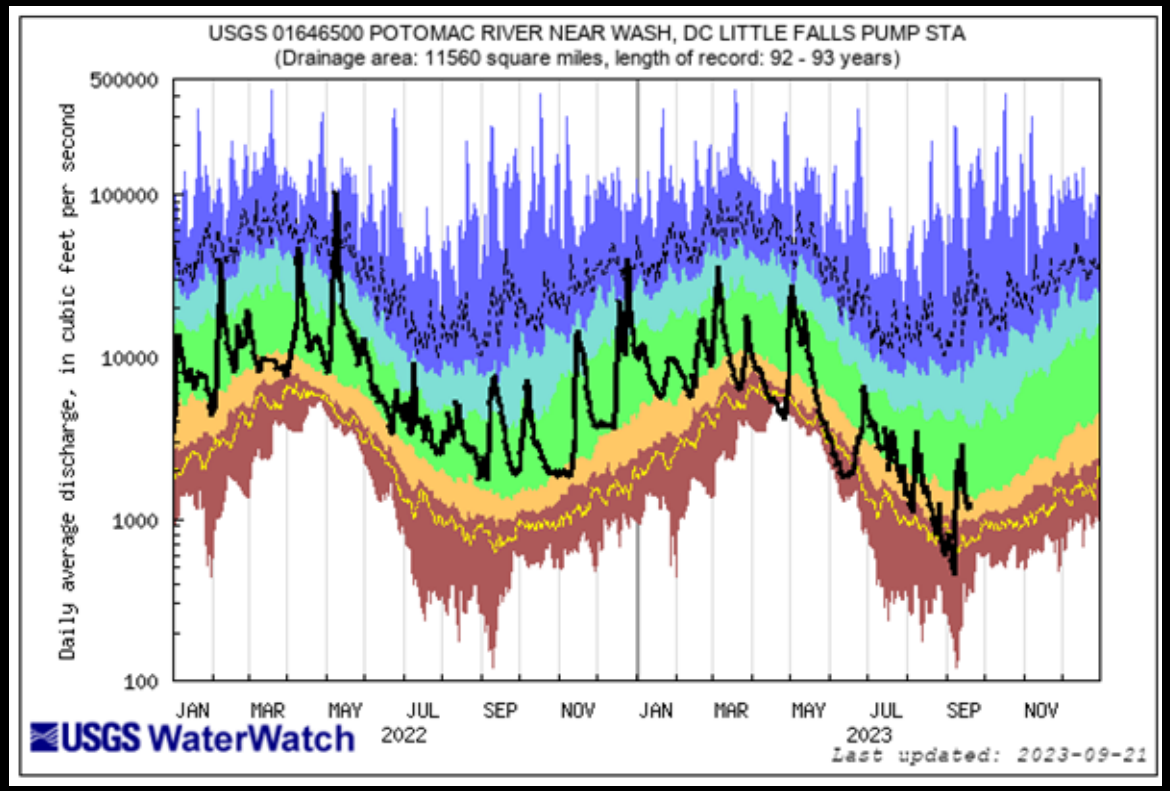


- 508 sq miles
- 79 years of data

USGS

Streamflow Conditions for 01646500 Potomac River near Wash. DC, Little Falls

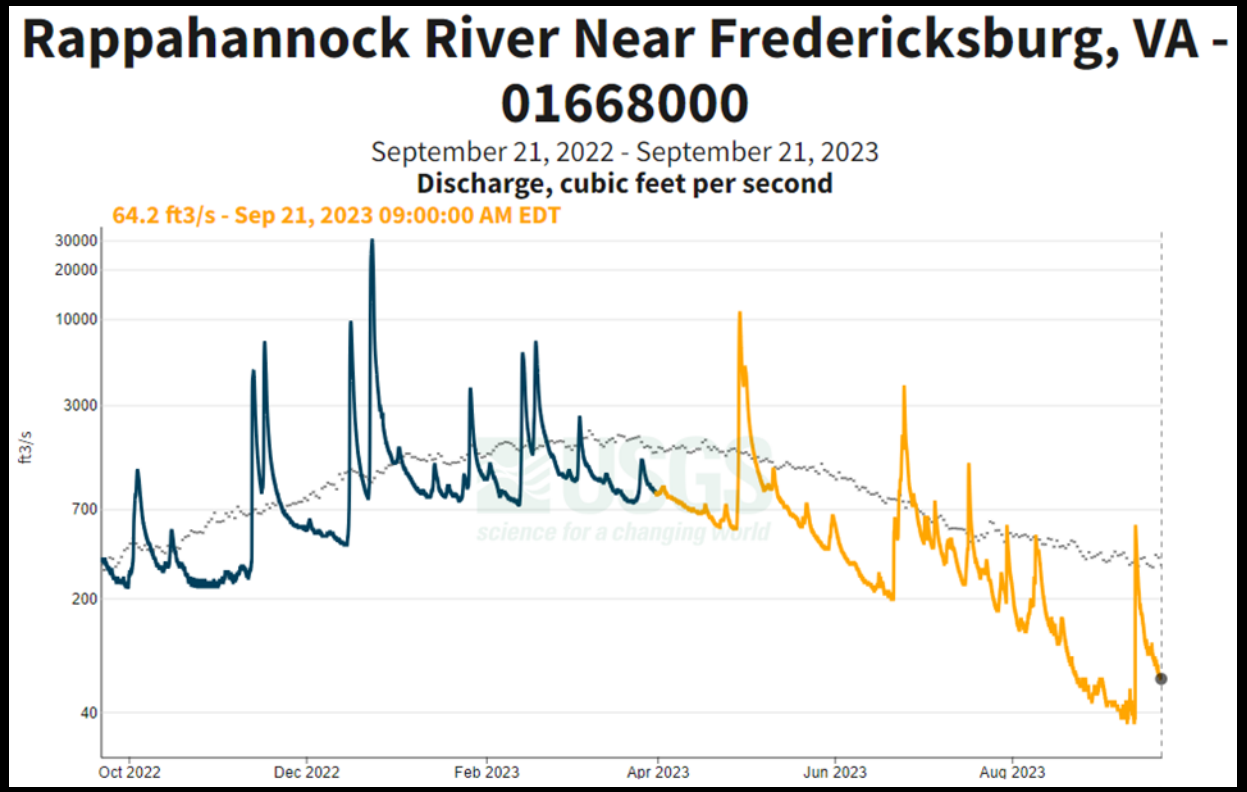


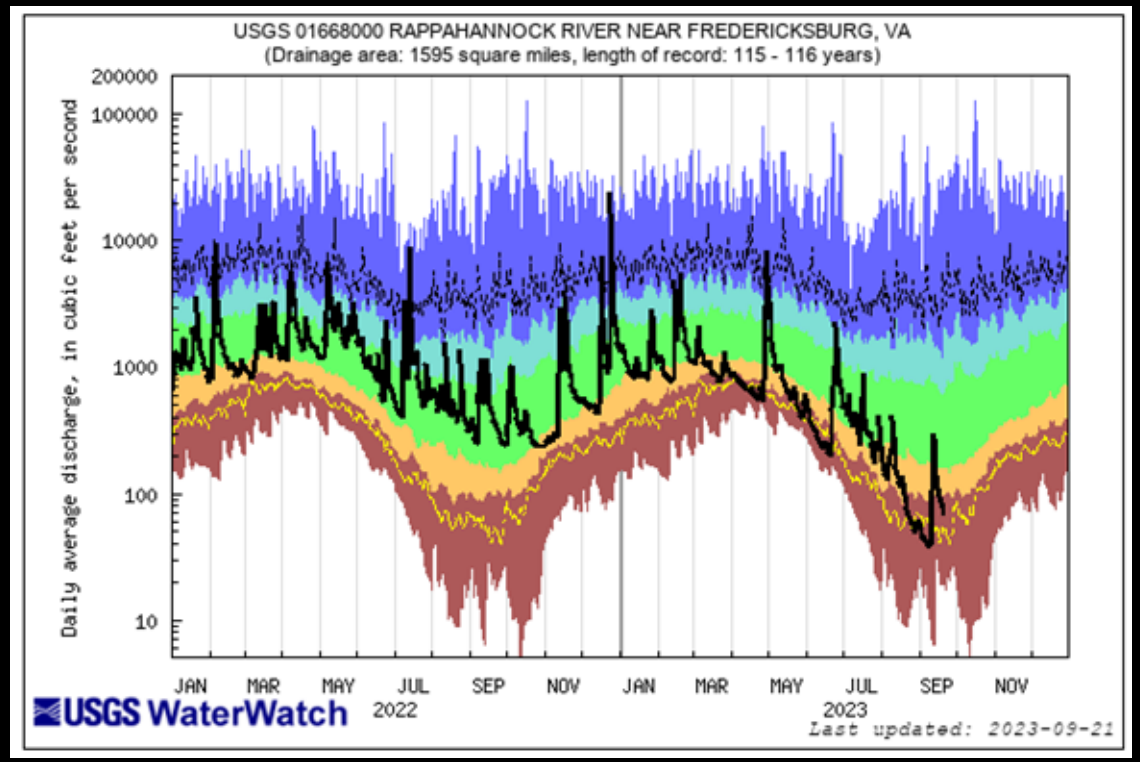


- 11560 sq miles
- 92 years of data

USGS

Streamflow Conditions for 01668000 Rappahannock River near Fredericksburg, VA

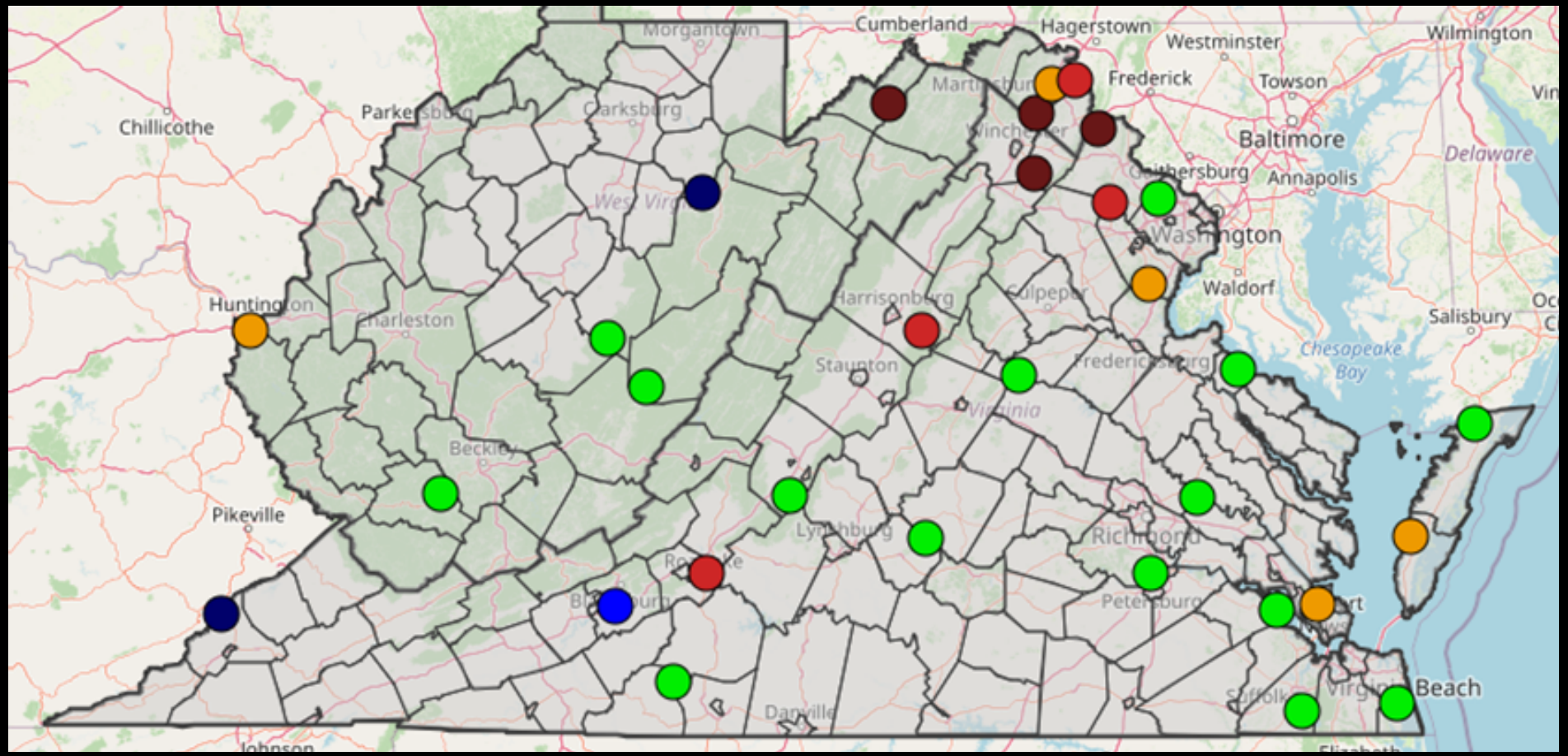




- 1595 sq miles
- 115 years of data

USGS

Groundwater Levels - Climate Response Network

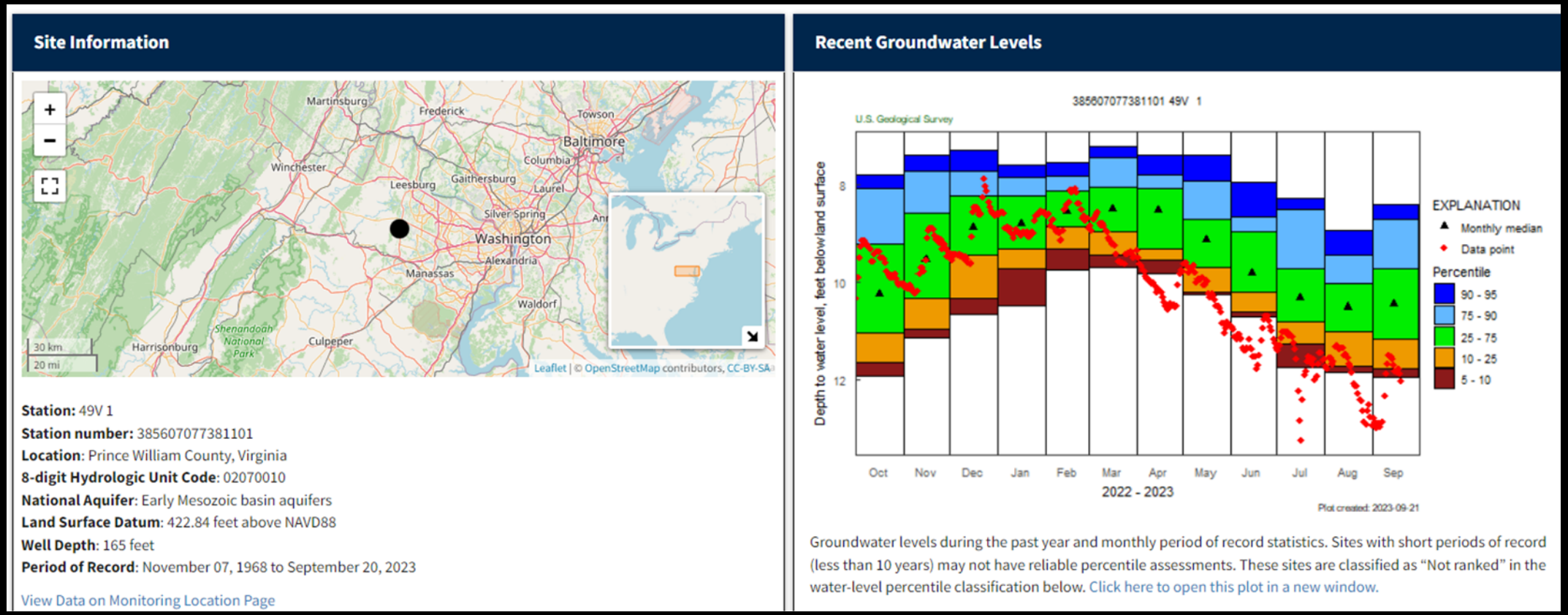


- Valley & Ridge monitoring wells in the lowest percentile ranges

New VA-WV WSC Developed Page: https://rconnect.usgs.gov/vawv- groundwater/

USGS

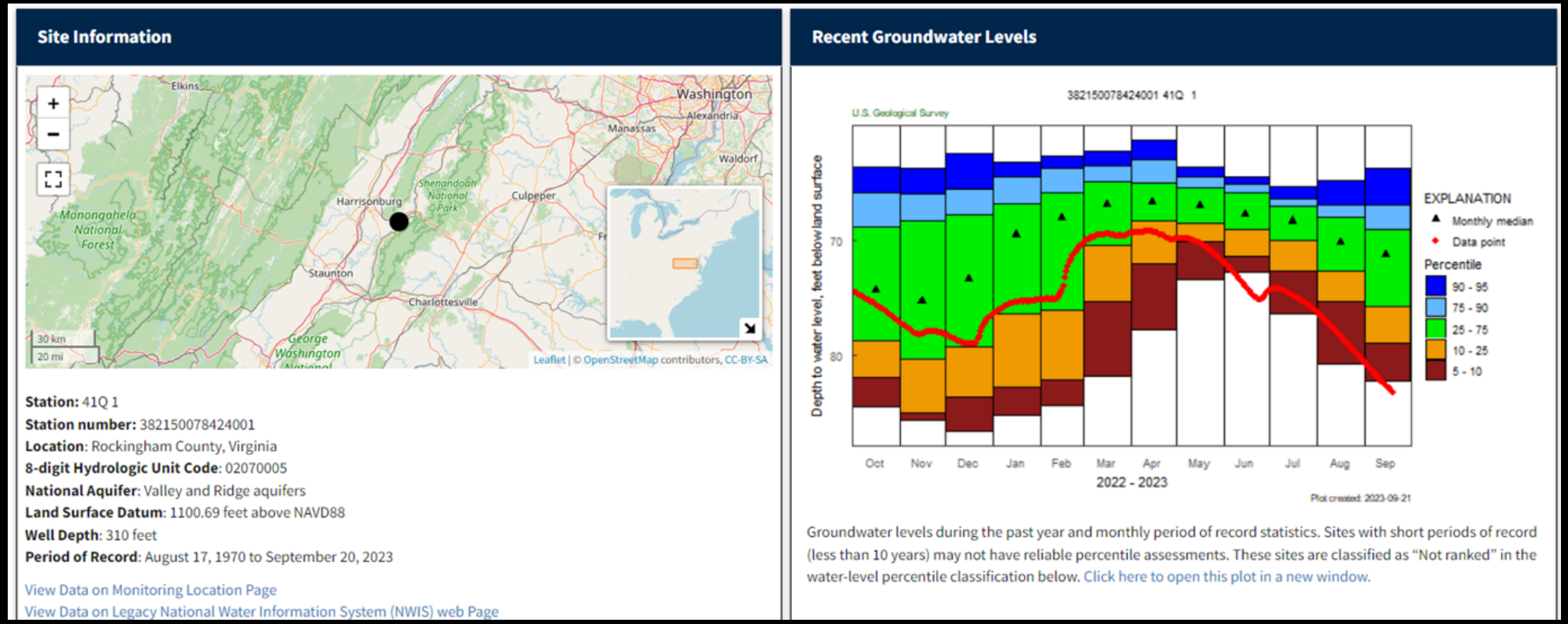
Groundwater Levels - Climate Response Network



- 49V 1
- Prince William County
- 165 ft deep

- 55 year record
- Below 5th percentile

Groundwater Levels - Climate Response Network



- 41Q 1
- Rockingham County
- 310 ft deep

- 53 year record
- Below 5th percentile

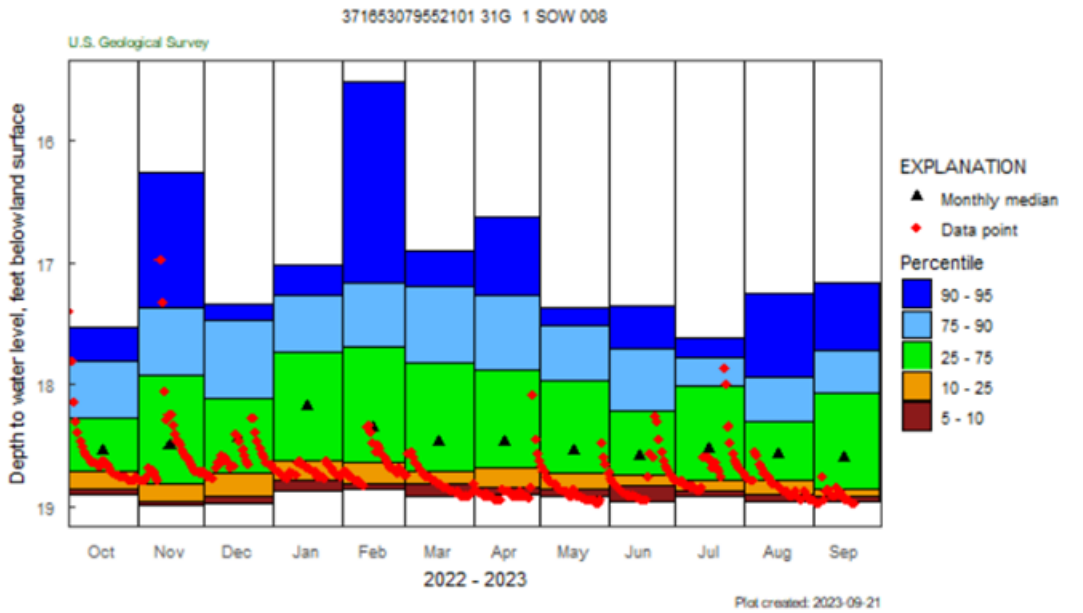
Groundwater Levels - Climate Response Network

Site Information

Station: 31G 1 SOW 008
Station number: 371653079552101
Location: Roanoke City, Virginia
8-digit Hydrologic Unit Code: 03010101
National Aquifer: Valley and Ridge aquifers
Land Surface Datum: 930 feet above NGVD29
Well Depth: 55 feet
Period of Record: August 20, 1966 to September 20, 2023

View Data on Monitoring Location Page
View Data on Legacy National Water Information System (NWIS) web Page

Recent Groundwater Levels



Groundwater levels during the past year and monthly period of record statistics. Sites with short periods of record (less than 10 years) may not have reliable percentile assessments. These sites are classified as "Not ranked" in the water-level percentile classification below. Click here to open this plot in a new window.

- 31G 1 SOW 008
- Roanoke City
- 55 ft deep

- 57 year record
- Below 5th percentile

USGS

Questions?

Matt Kearns
Hydrologist, VA-WV Water Science Center
mkearns@usgs.gov
681-340-8389

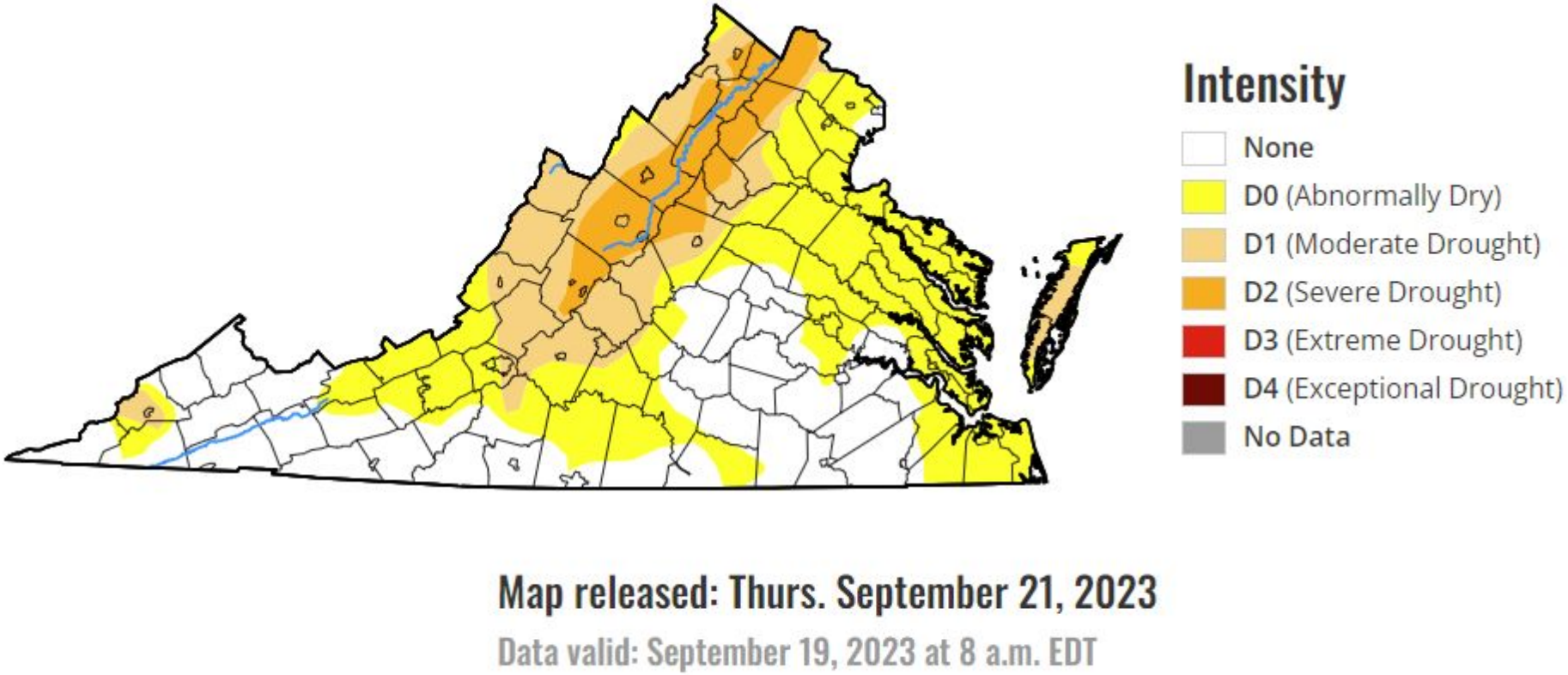
Shaun Wicklein
Associate Director for Data, VA-WV Water Science Center
smwickle@usgs.gov

Jeremy S White
Supv Hydrologic Technician, VA-WV Water Science Center
jswhite@usgs.gov

VA Drought Monitoring Task Force

Ben Gruver
National Weather Service – Blacksburg, VA
September 21, 2023

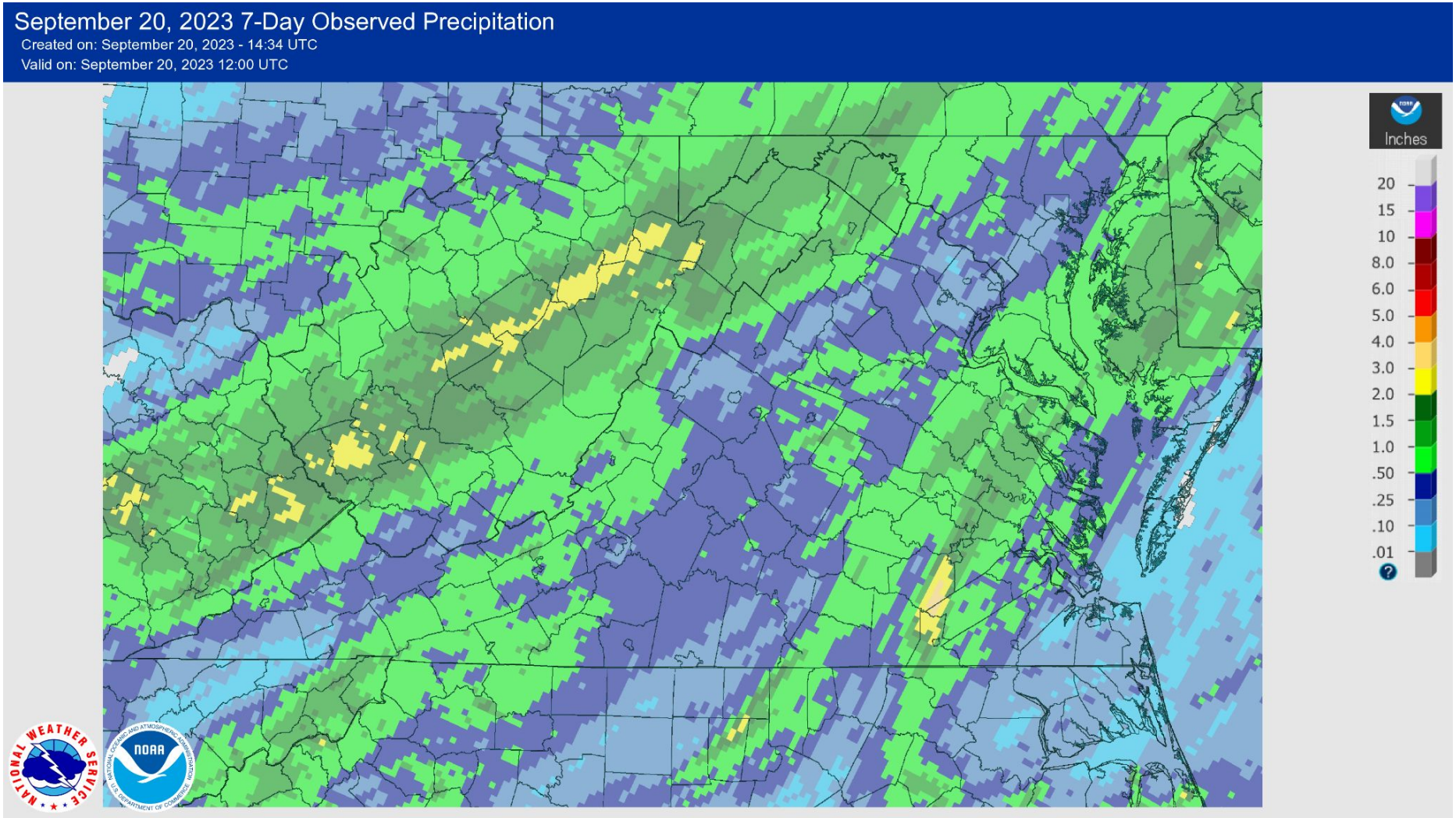
U.S. Drought Monitor



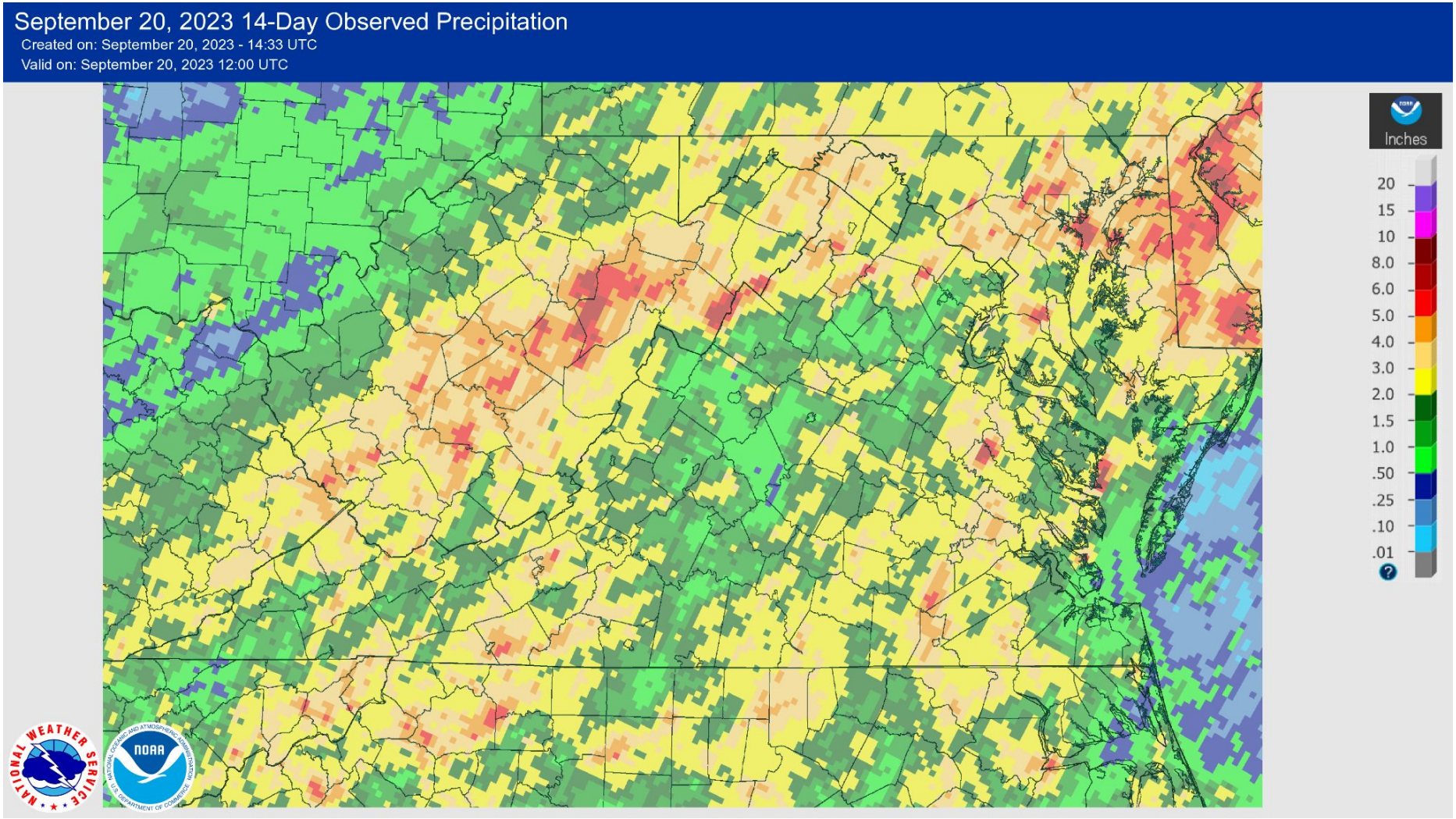
Map released: Thurs. September 21, 2023

Data valid: September 19, 2023 at 8 a.m. EDT

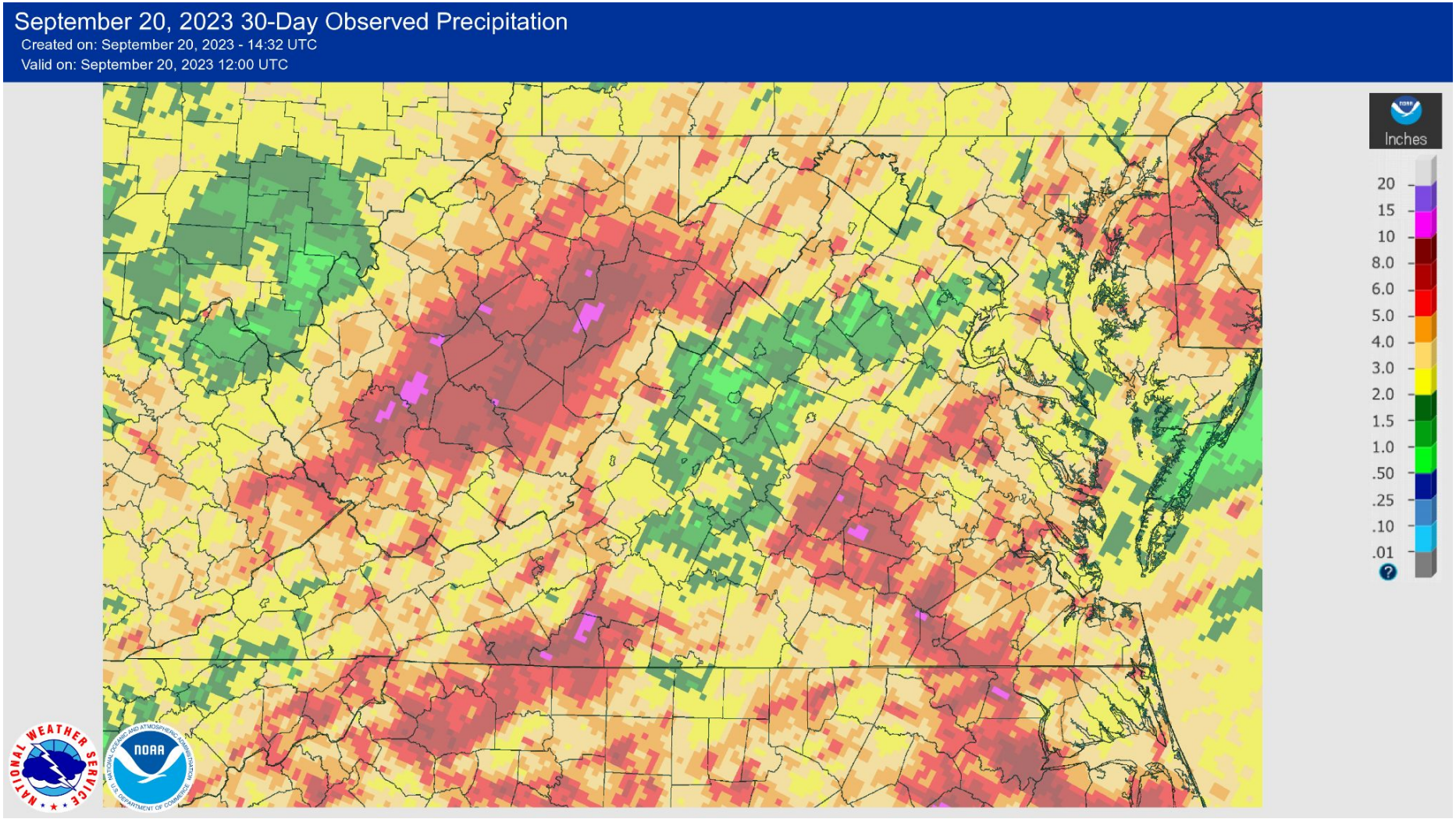
7-Day Observed Precipitation



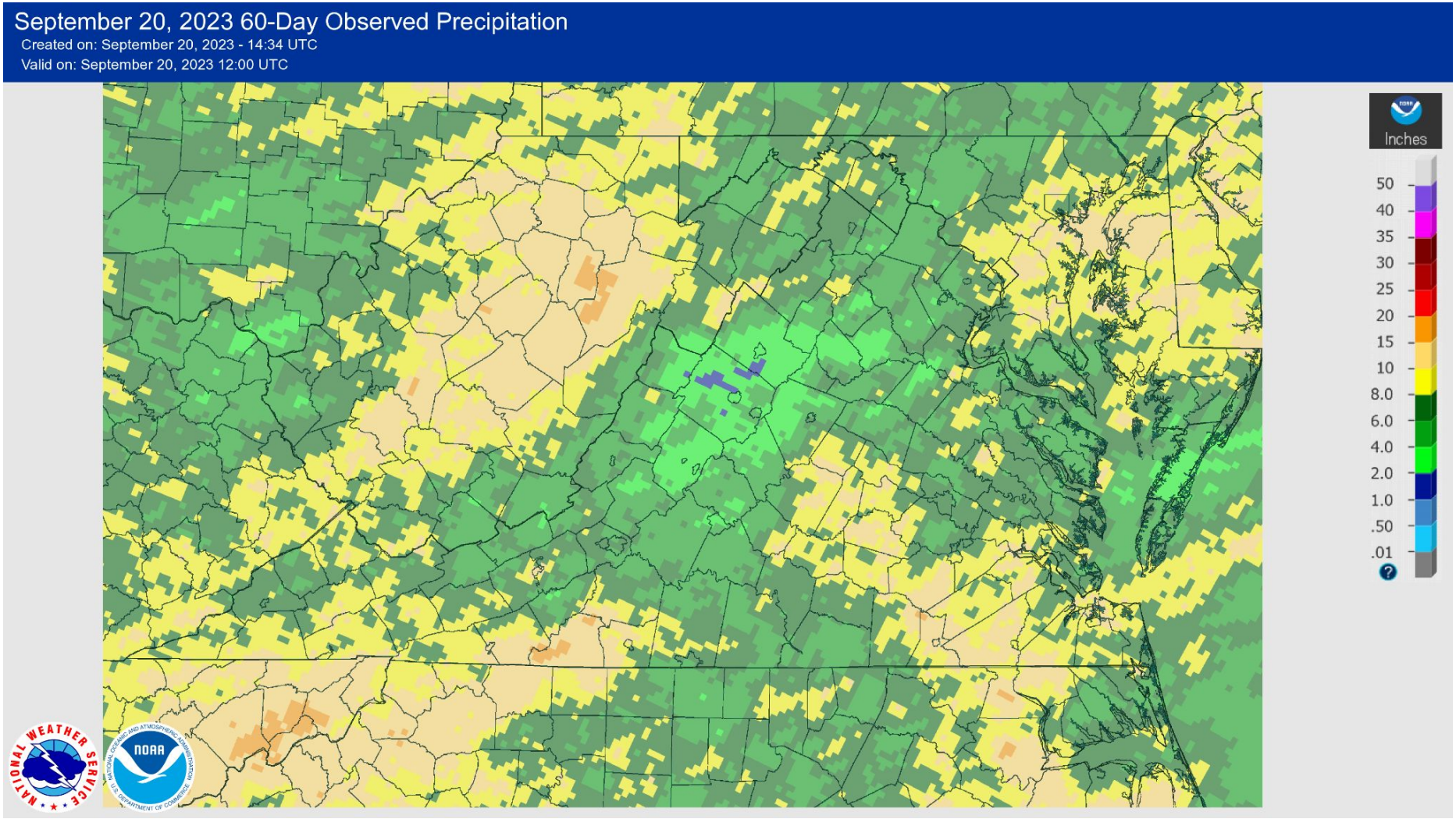
14-Day Observed Precipitation



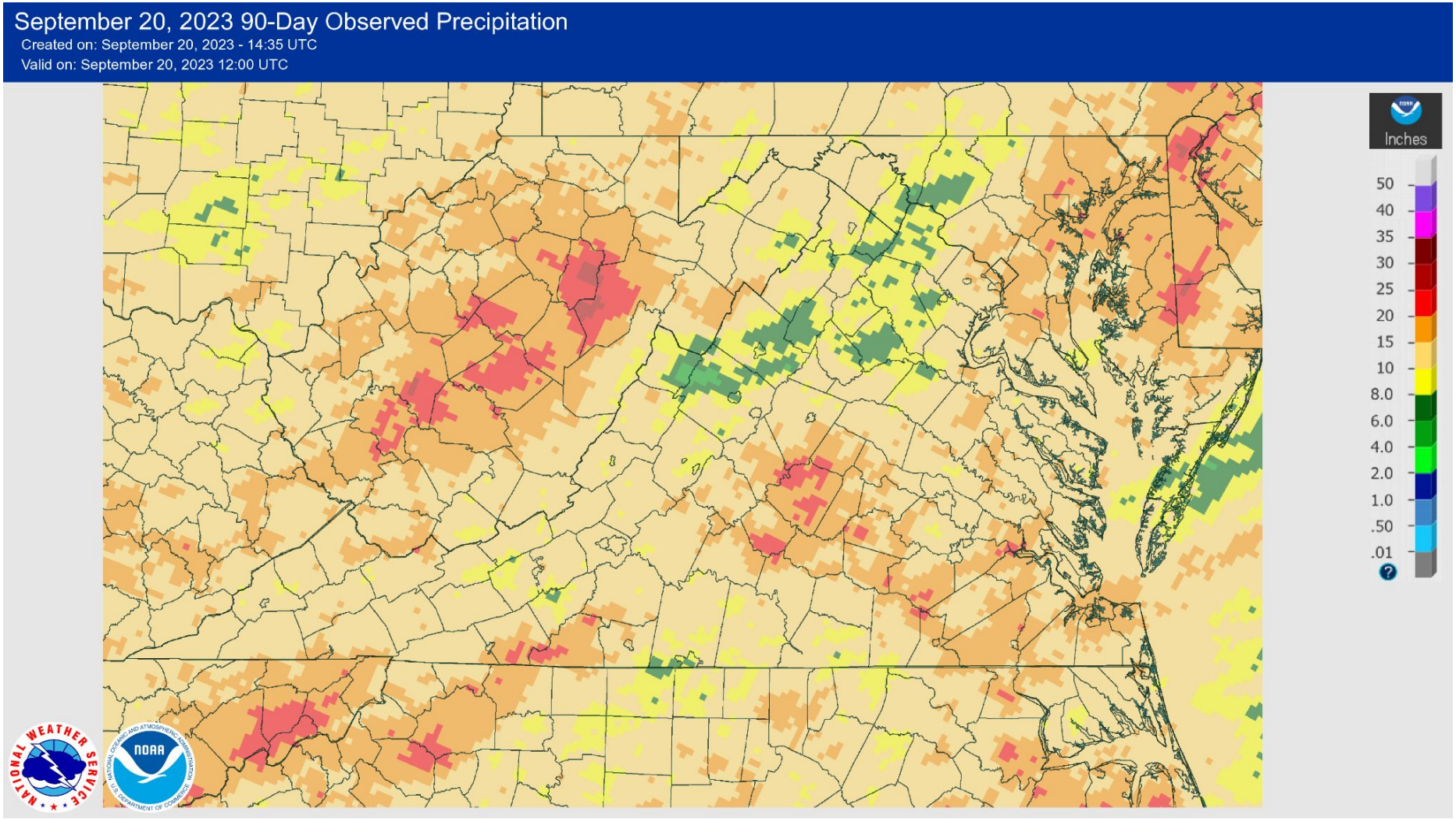
30-Day Observed Precipitation



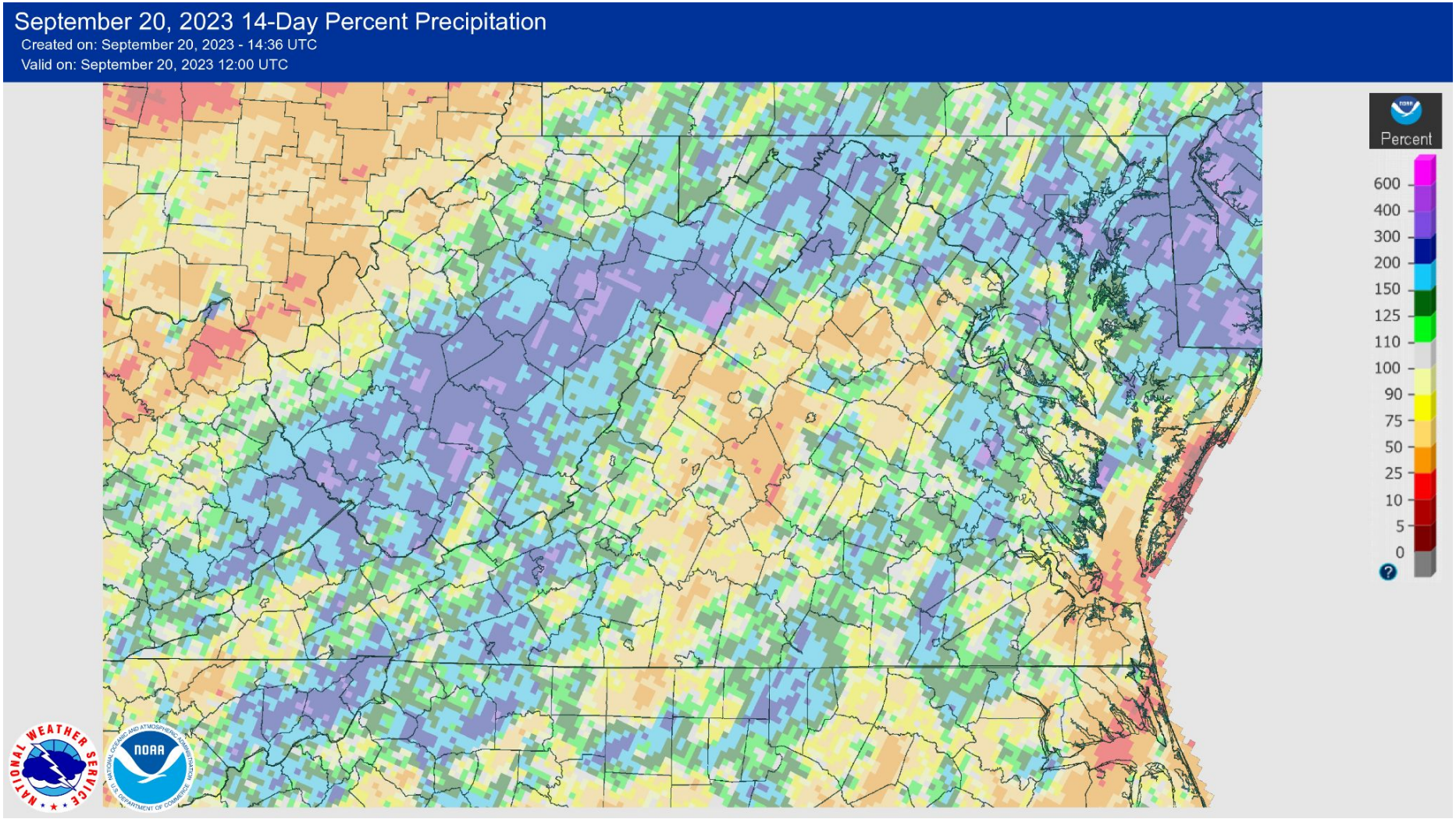
60-Day Observed Precipitation



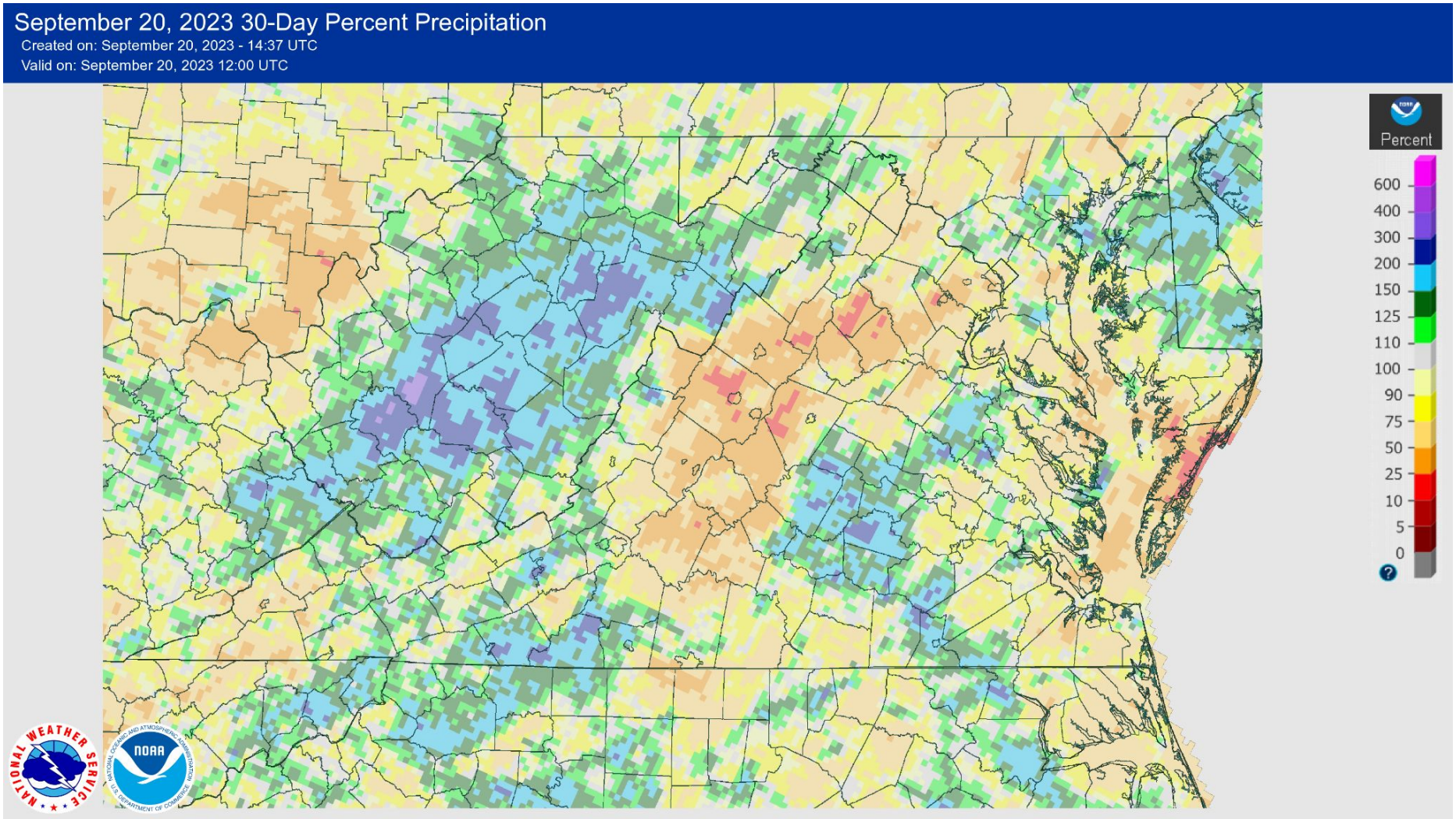
90-Day Observed Precipitation



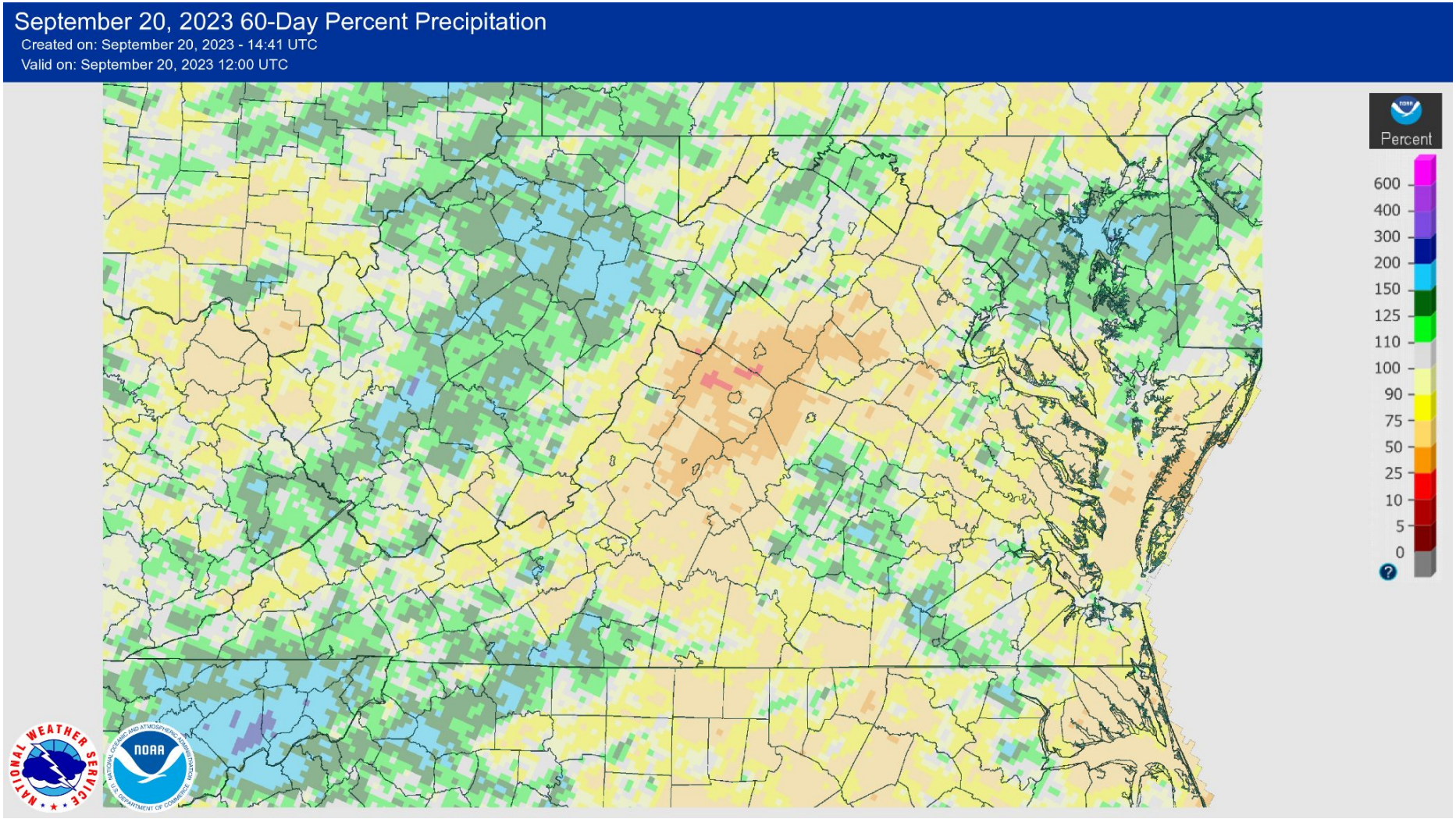
14-Day Percent of Normal Precipitation



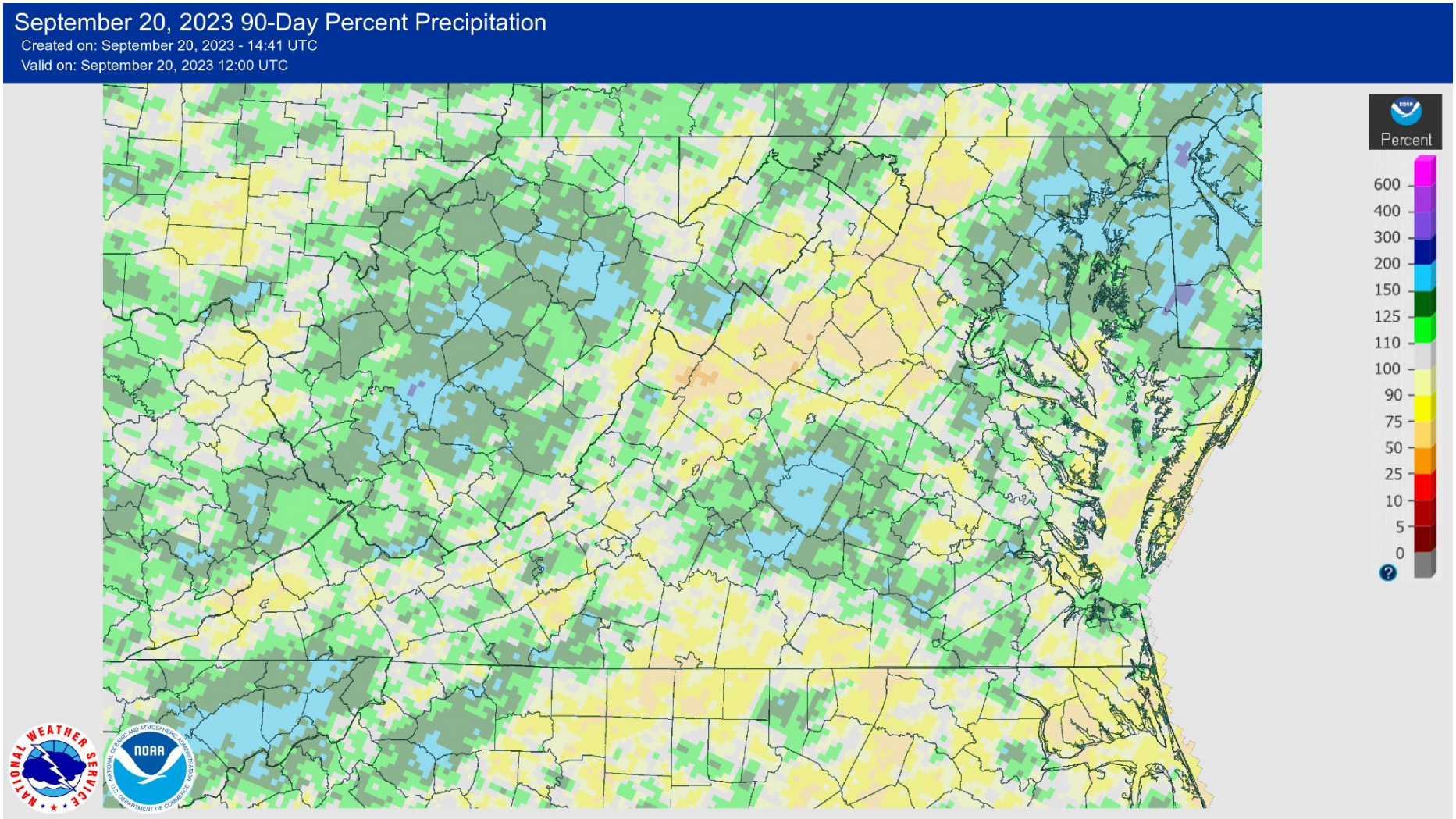
30-Day Percent of Normal Precipitation



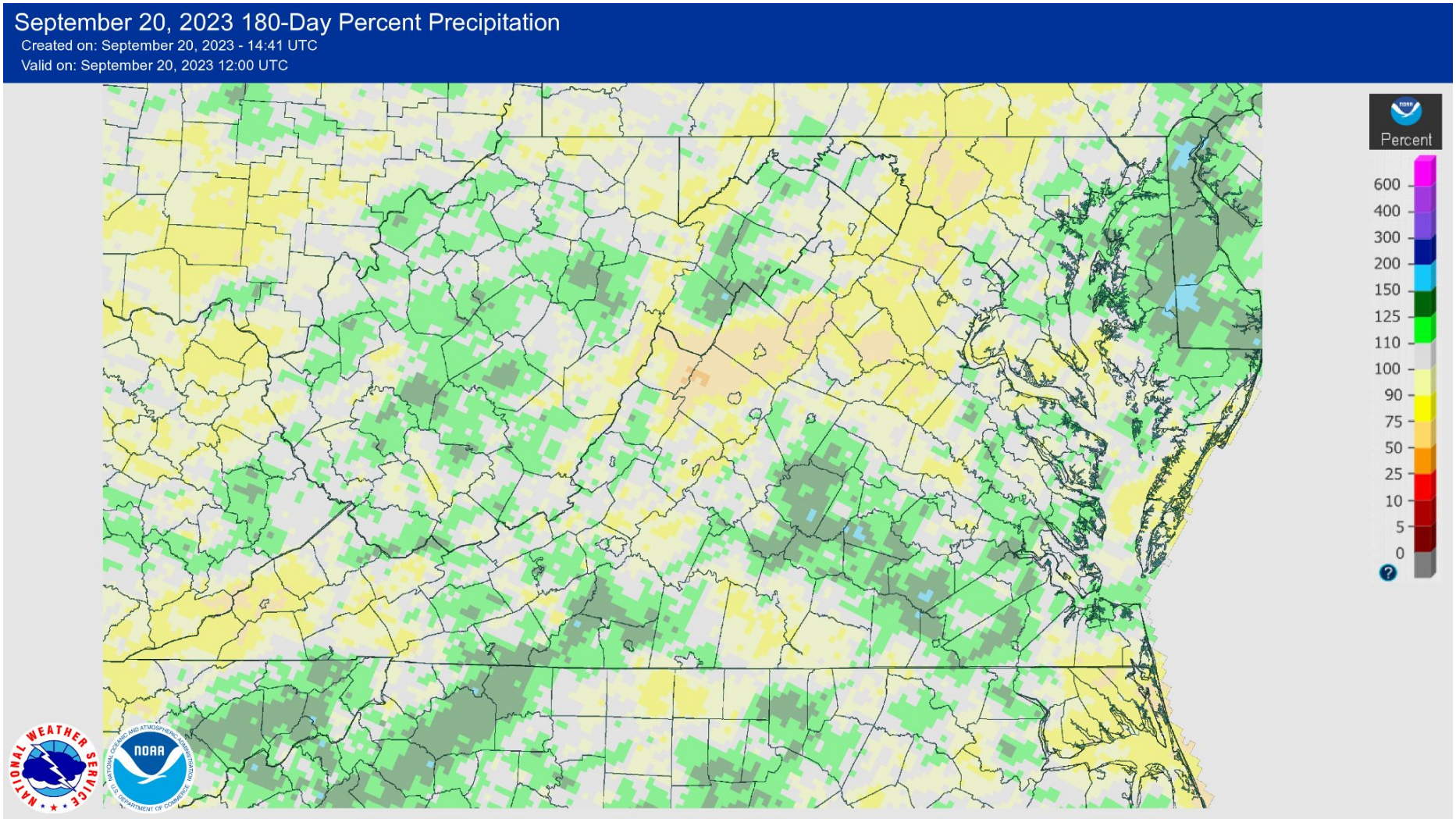
60-Day Percent of Normal Precipitation



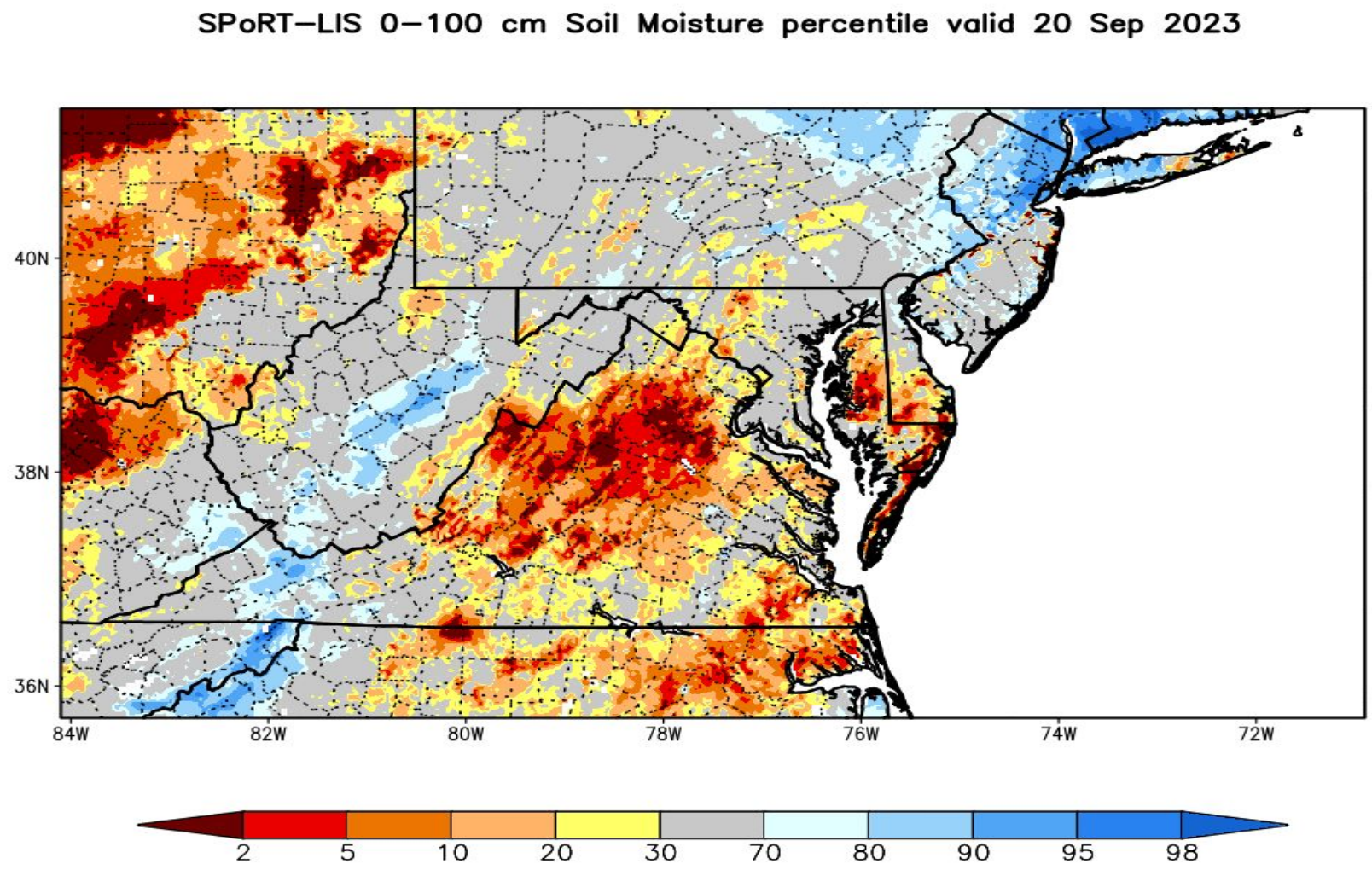
90-Day Percent of Normal Precipitation



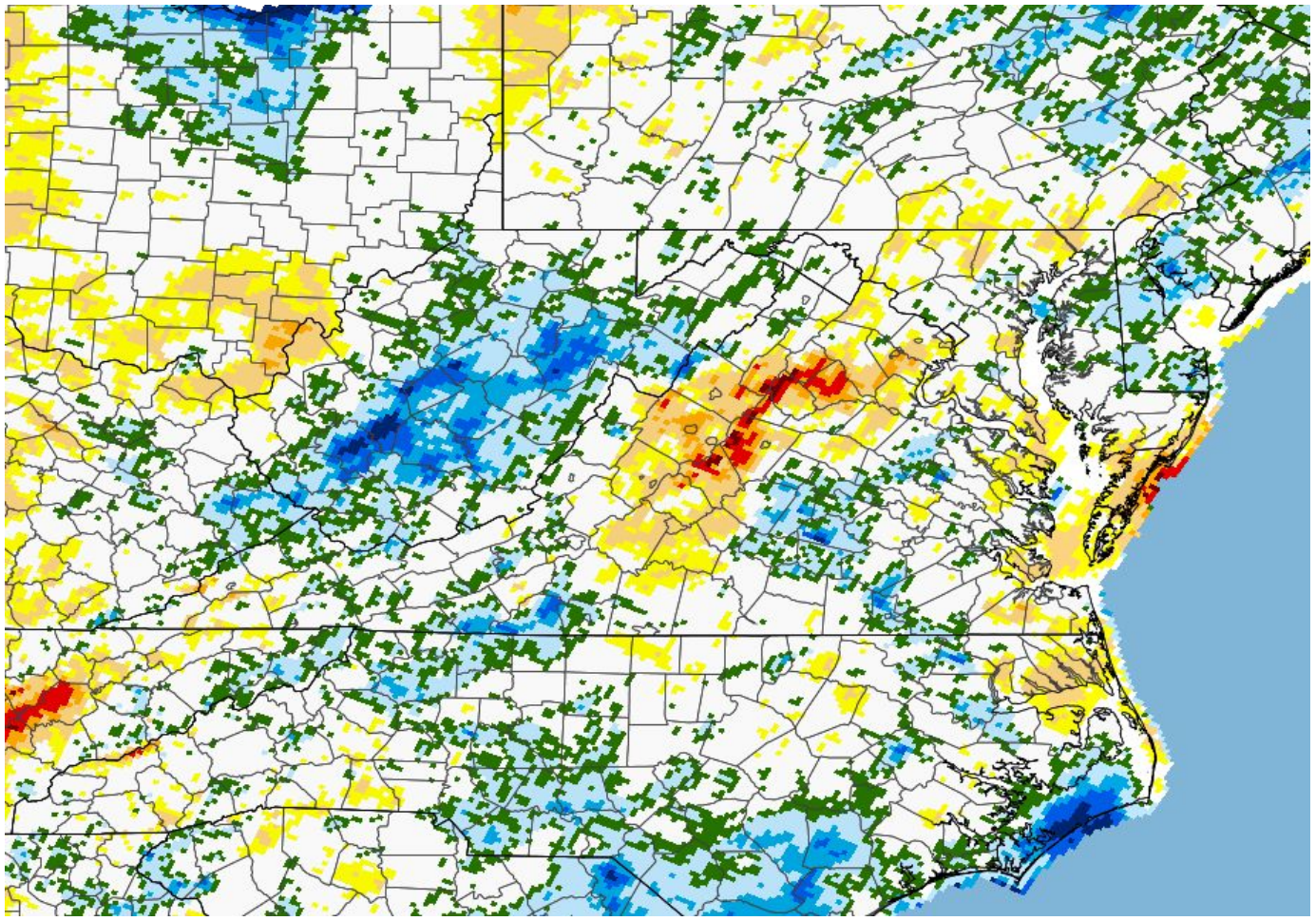
180-Day Percent of Normal Precipitation

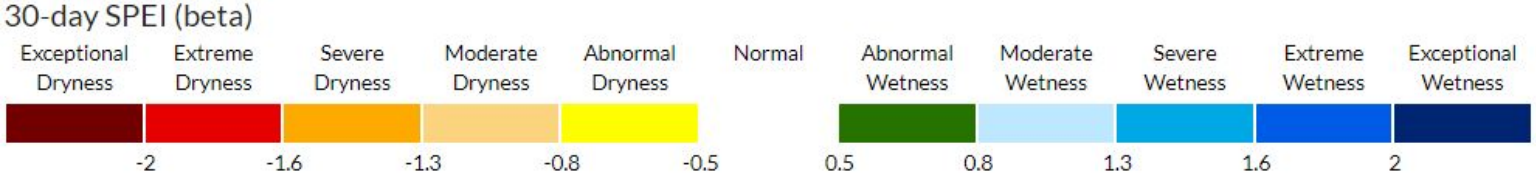


NASA SPoRT LIS Soil Moisture

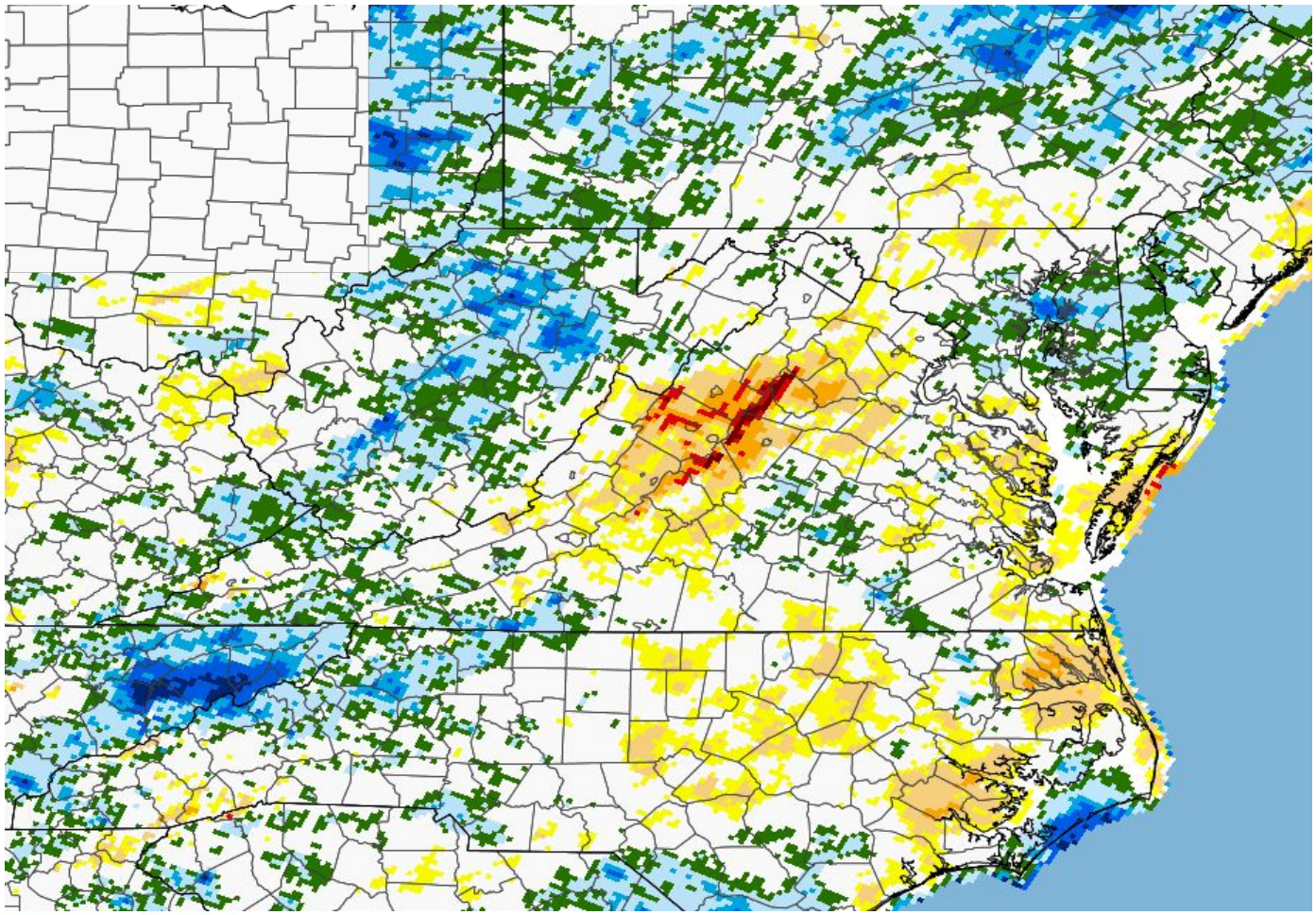


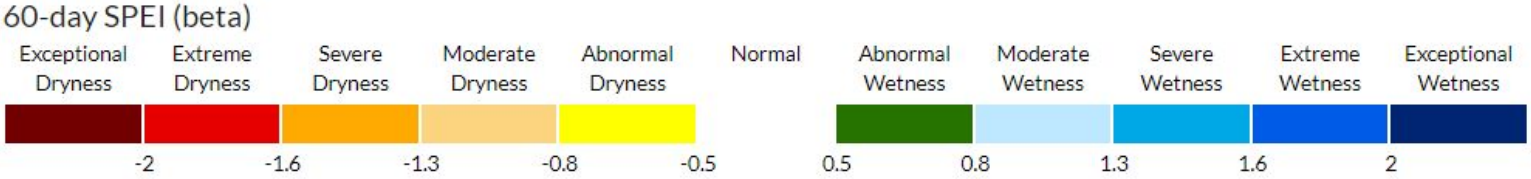
30-Day SPEI



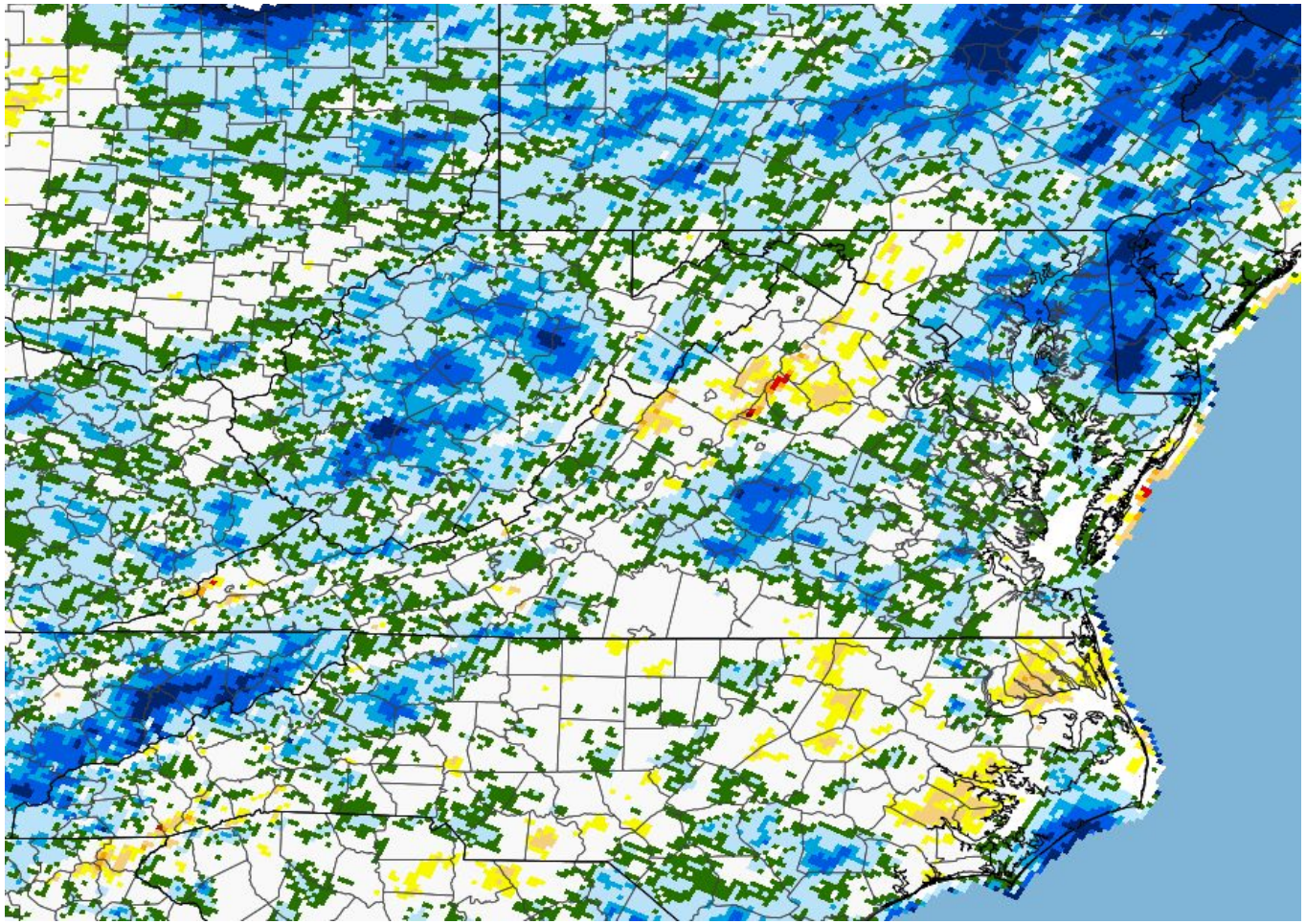

30-day SPEI (beta)
Exceptional Dryness
Extreme Dryness
Severe Dryness
Moderate Dryness
Abnormal Dryness
Normal
Abnormal Wetness
Moderate Wetness
Severe Wetness
Extreme Wetness
Exceptional Wetness
-2
-1.6
-1.3
-0.8
-0.5
0.5
0.8
1.3
1.6
2

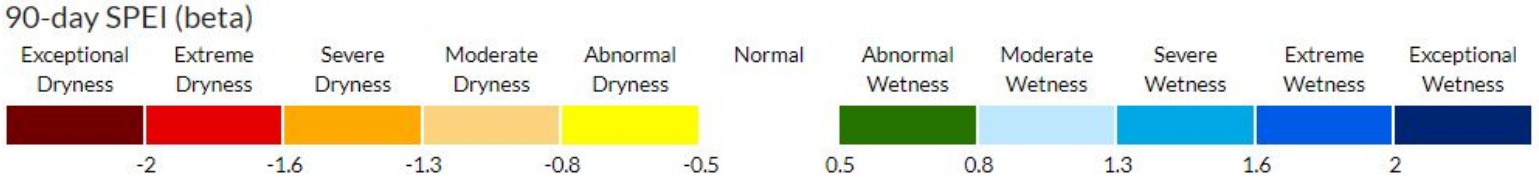
60-Day SPEI




60-day SPEI (beta)
Exceptional Dryness
Extreme Dryness
Severe Dryness
Moderate Dryness
Abnormal Dryness
Normal
Abnormal Wetness
Moderate Wetness
Severe Wetness
Extreme Wetness
Exceptional Wetness
-2
-1.6
-1.3
-0.8
-0.5
0.5
0.8
1.3
1.6
2

90-Day SPEI

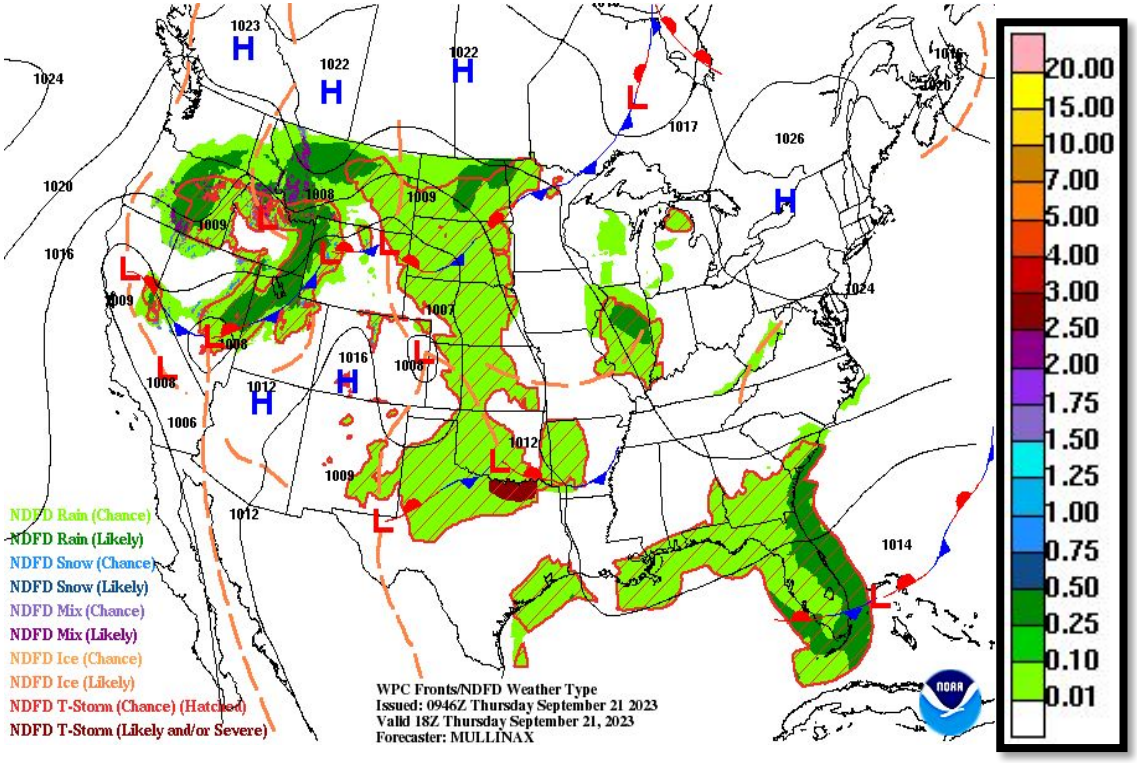



90-day SPEI (beta)
Exceptional Dryness
Extreme Dryness
Severe Dryness
Moderate Dryness
Abnormal Dryness
Normal
Abnormal Wetness
Moderate Wetness
Severe Wetness
Extreme Wetness
Exceptional Wetness
-2
-1.6
-1.3
-0.8
-0.5
0.5
0.8
1.3
1.6
2

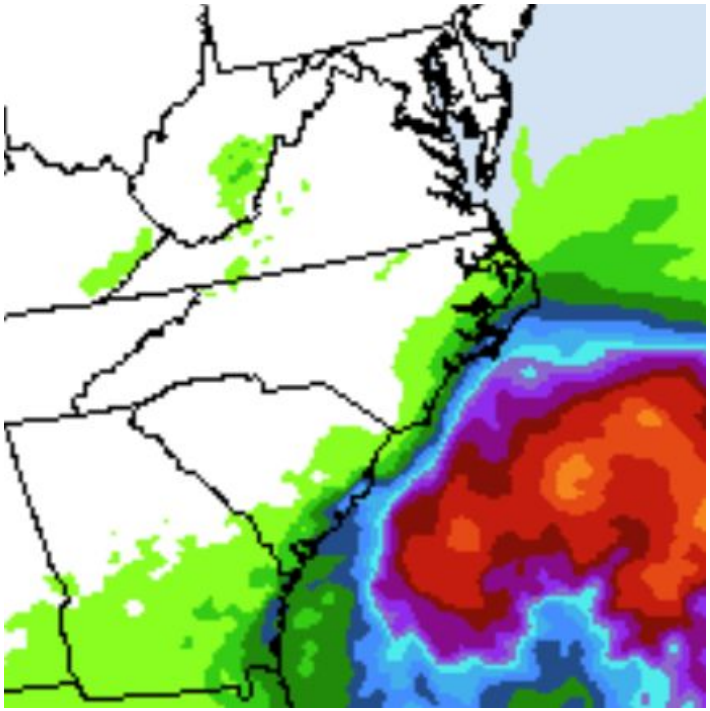
Upcoming Weather Pattern

Today

Fronts and Weather



Accumulated Precipitation Forecasts

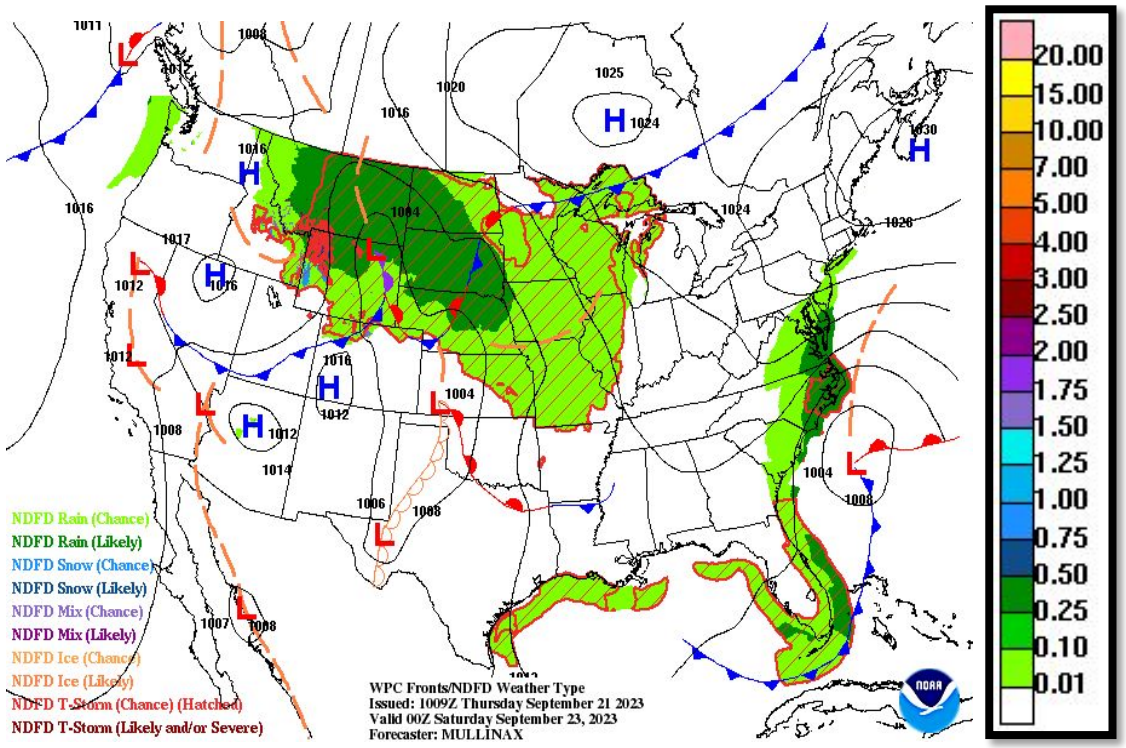


Courtesy of the Weather Prediction Center (www.wpc.ncep.noaa.gov)

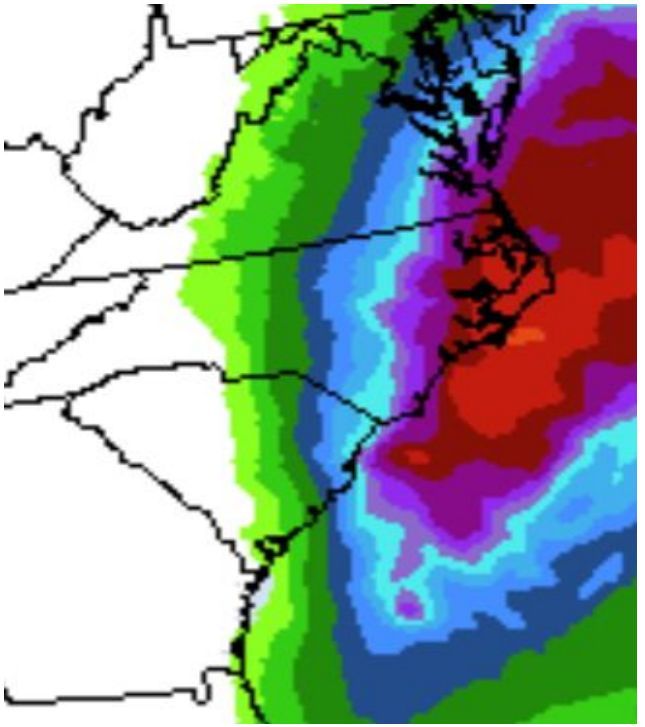
Upcoming Weather Pattern

Friday

Fronts and Weather



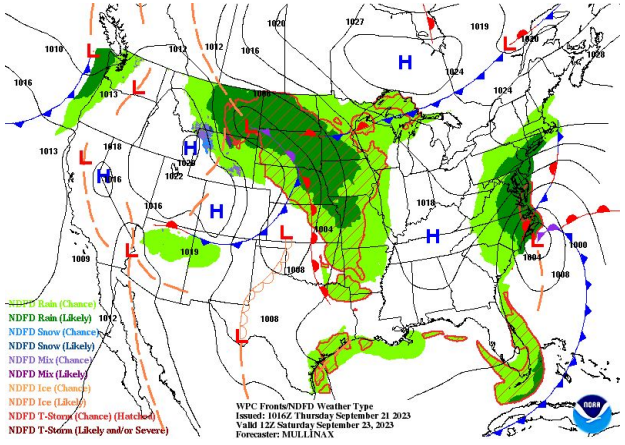
Accumulated Precipitation Forecasts



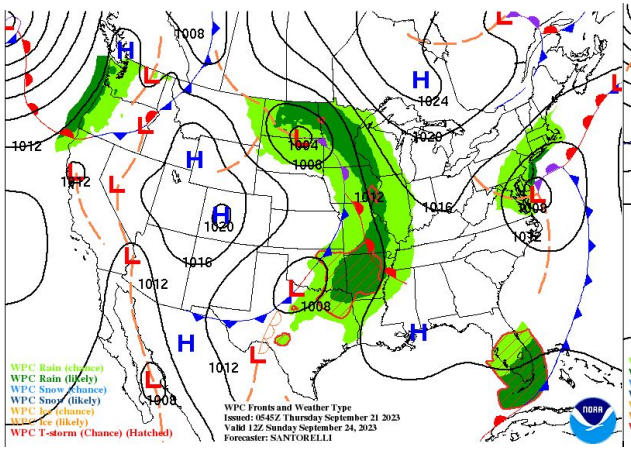
Courtesy of the Weather Prediction Center (www.wpc.ncep.noaa.gov)

Upcoming Weather Pattern

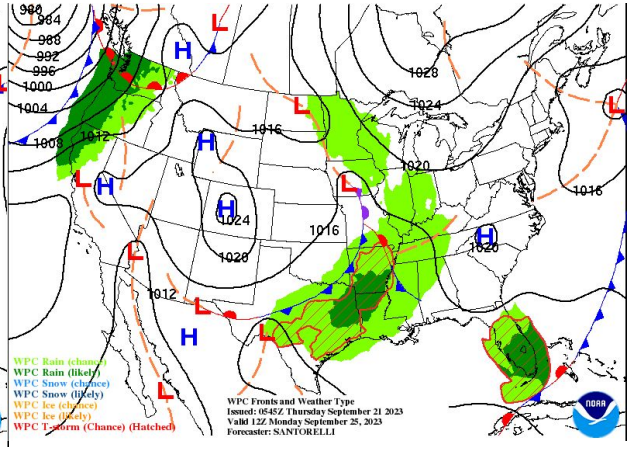
Saturday



Sunday



Monday



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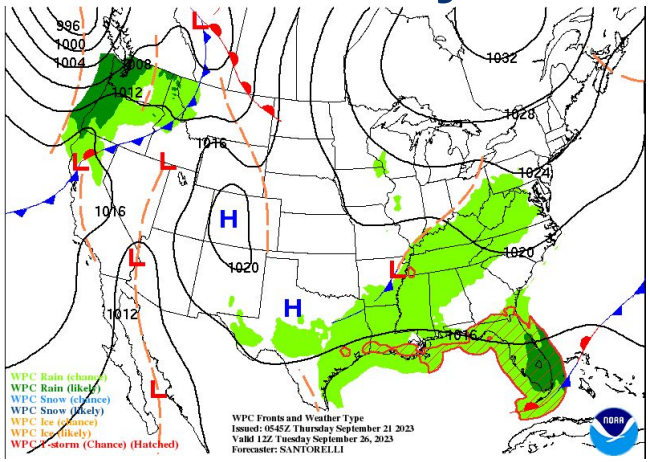
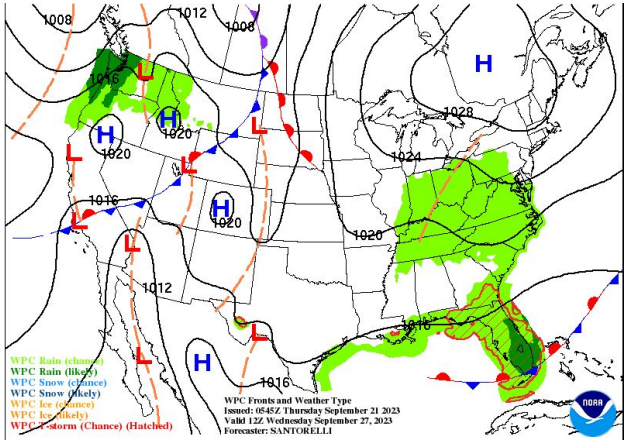


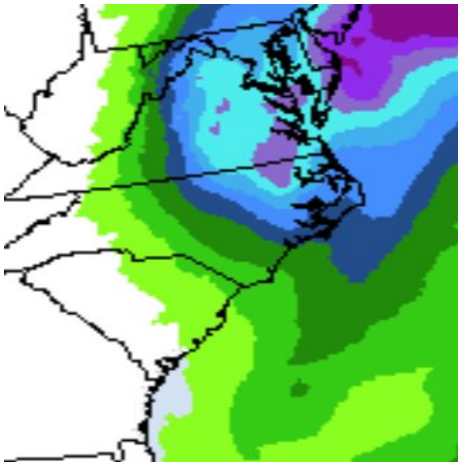
Wednesday



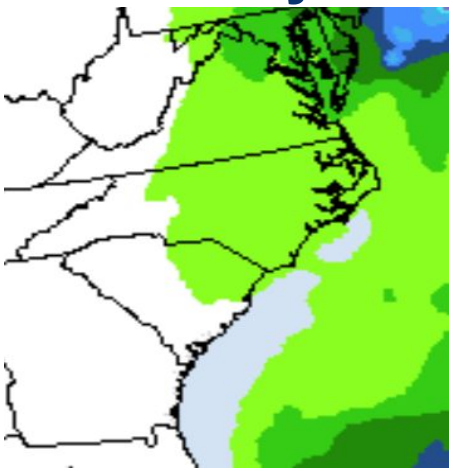
Courtesy of the Weather Prediction Center (www.wpc.ncep.noaa.gov)

Precipitation Forecasts

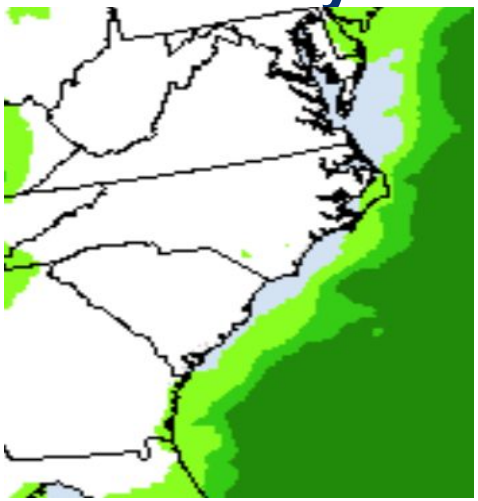
Saturday

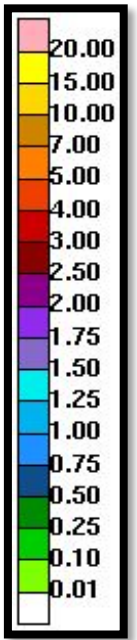


Sunday

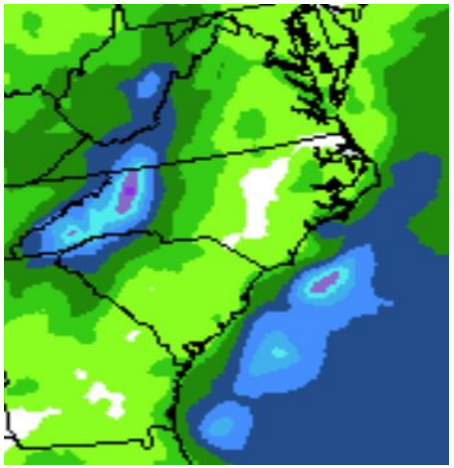


Monday

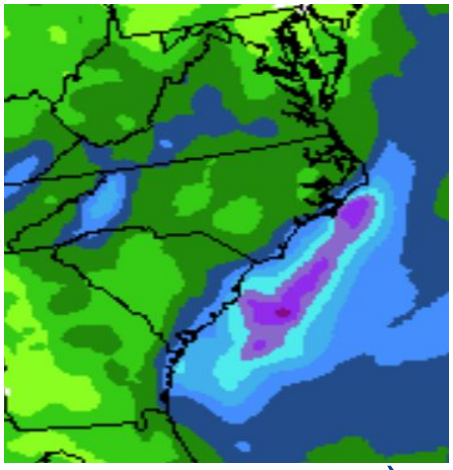




Tuesday

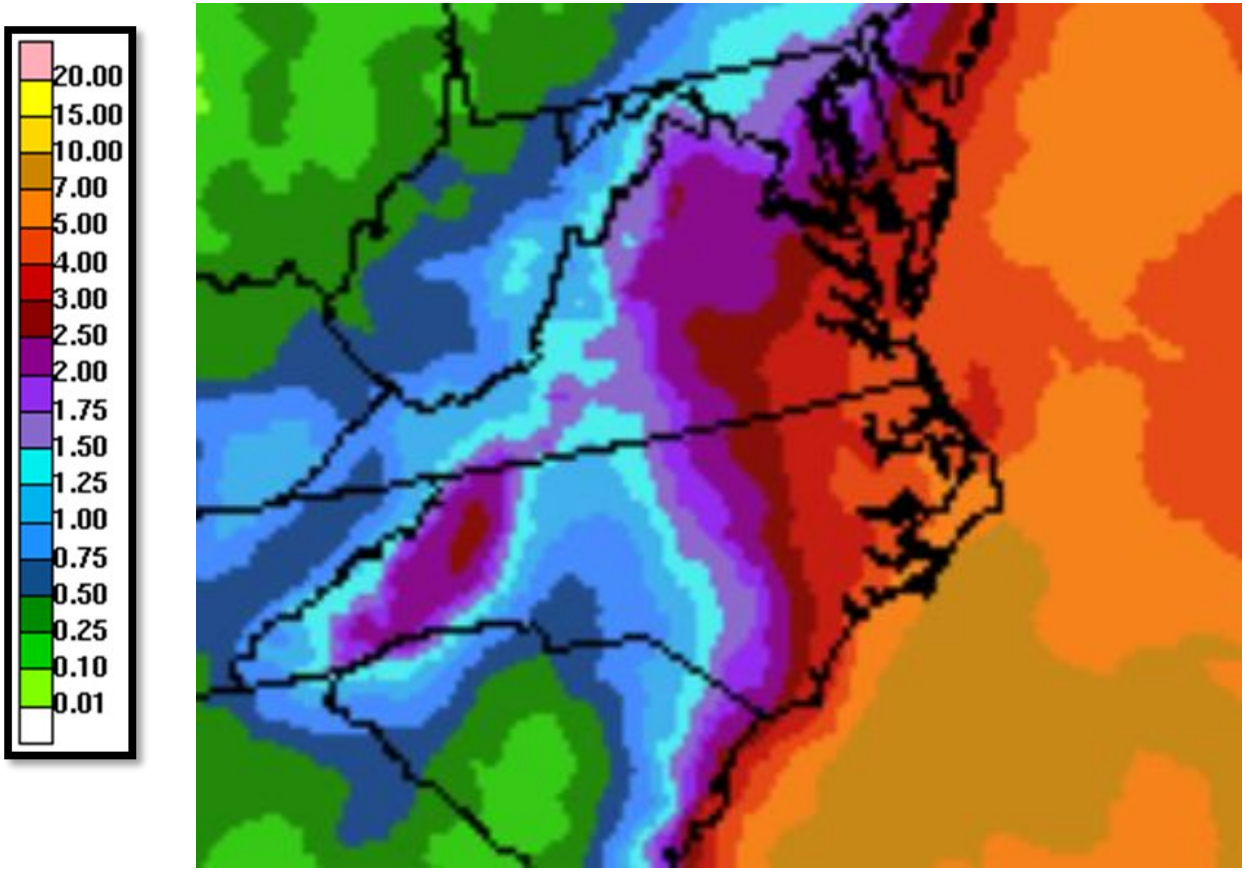


Wednesday



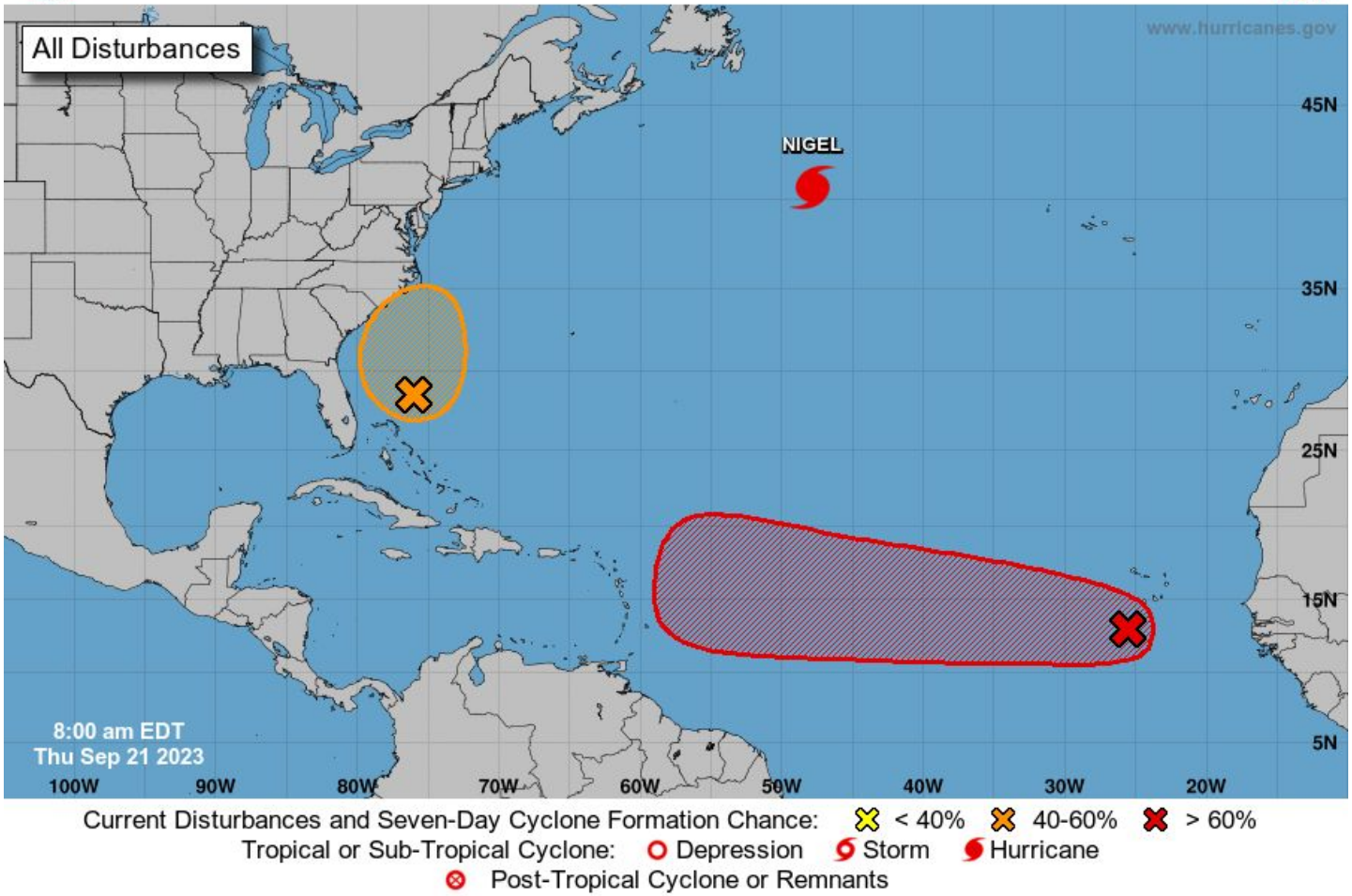
Courtesy of the Weather Prediction Center (www.wpc.ncep.noaa.gov)

Seven-Day Total Precipitation Forecast



Courtesy of the Weather Prediction Center (www.wpc.ncep.noaa.gov)

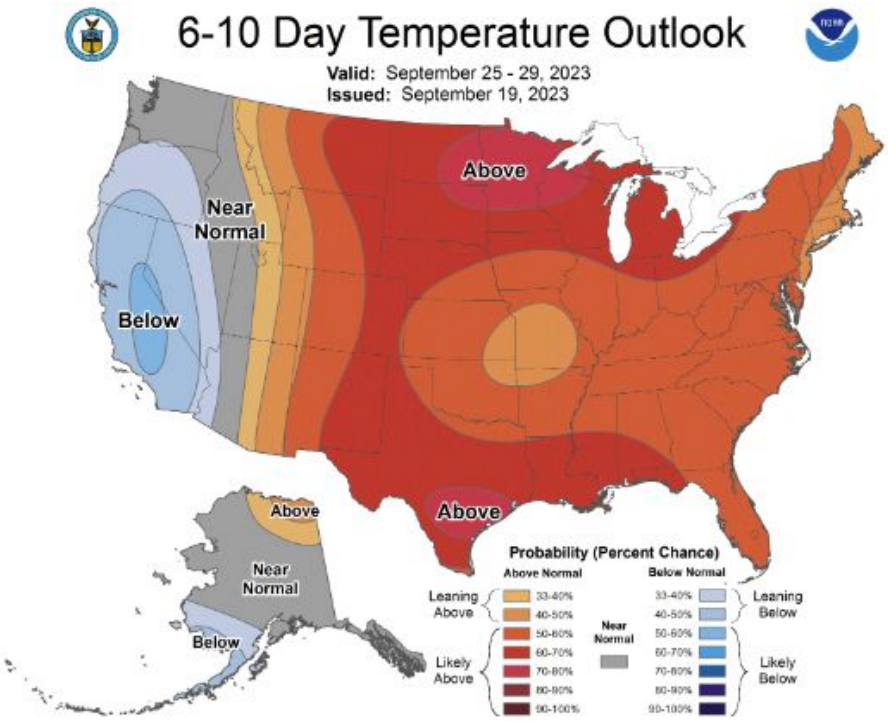
Tropical Outlook



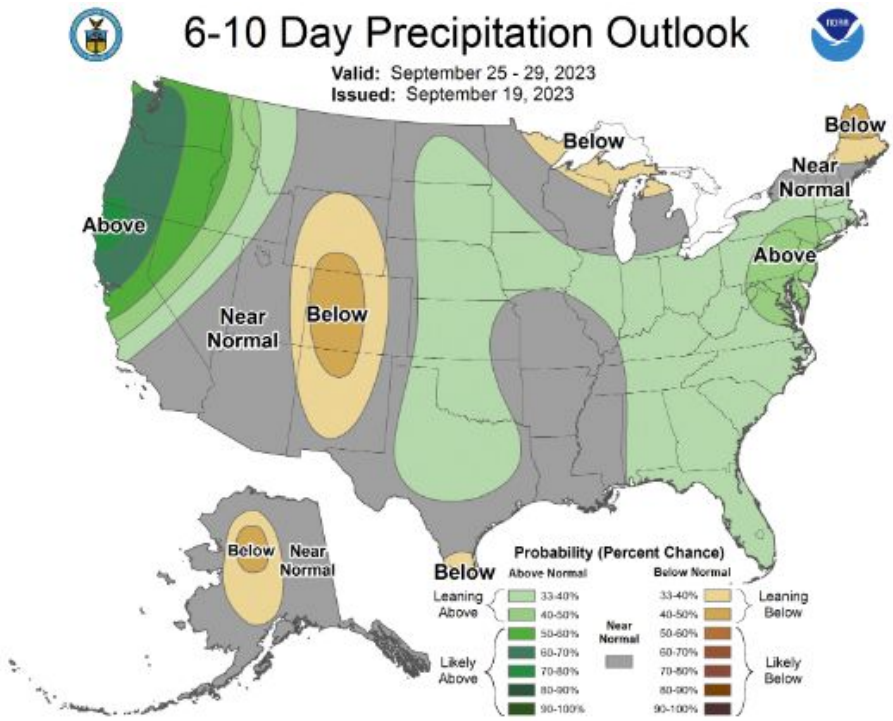
Courtesy of the National Hurricane Center (www.nhc.noaa.gov)

6-10 Day Outlook

Temperature



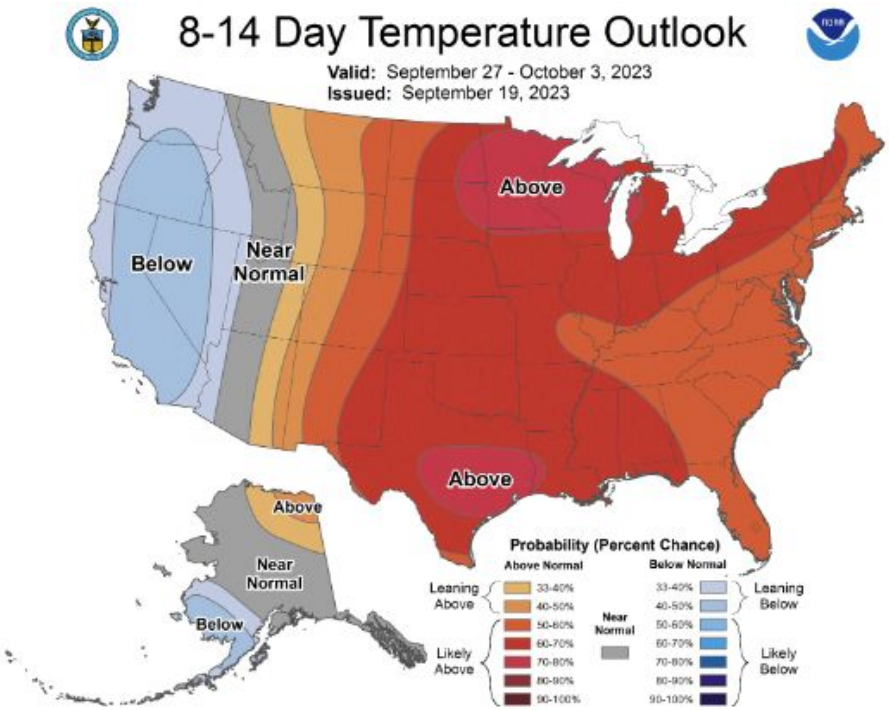
Precipitation



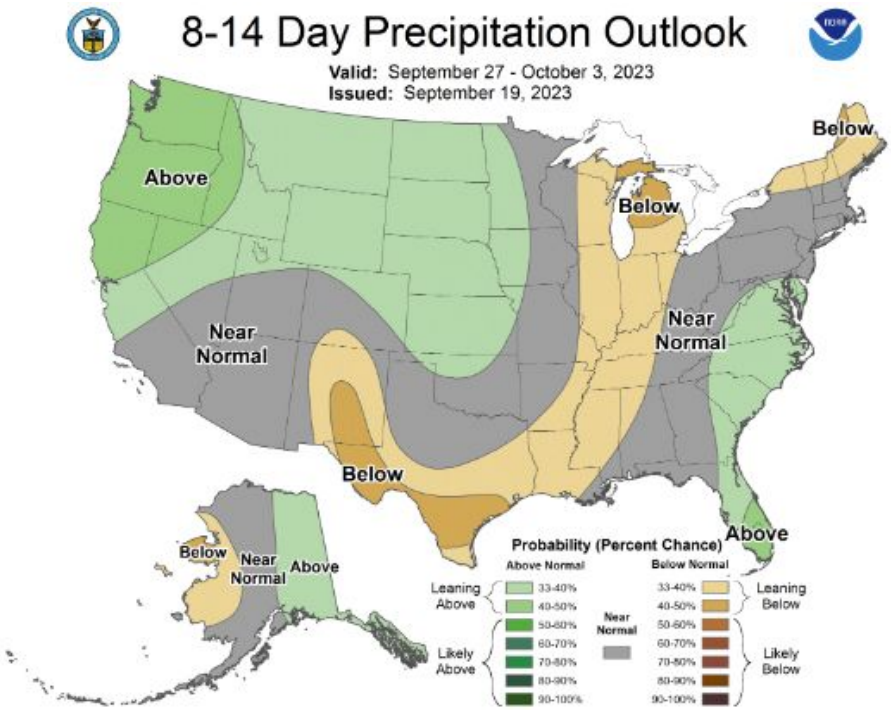
Courtesy of the Climate Prediction Center (www.cpc.ncep.noaa.gov)

8-14 Day Outlook

Temperature



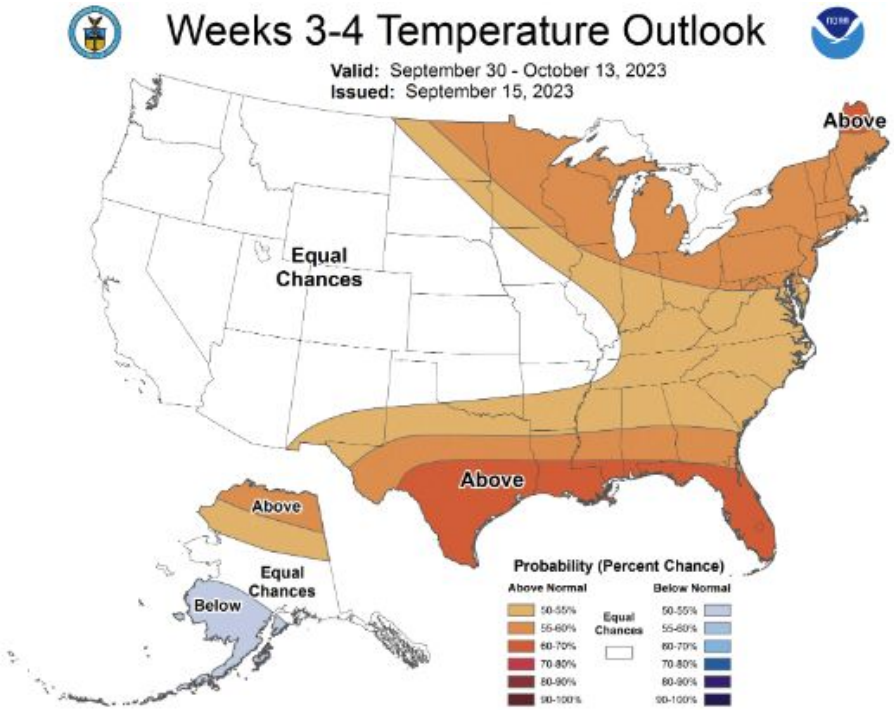
Precipitation



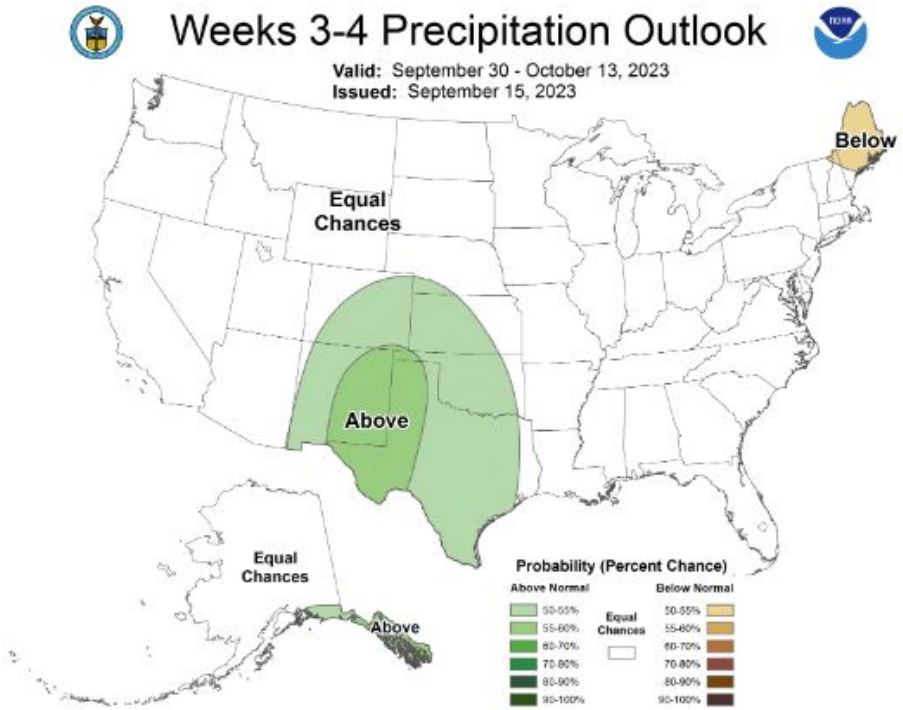
Courtesy of the Climate Prediction Center (www.cpc.ncep.noaa.gov)

3-4 Week Outlook

Temperature



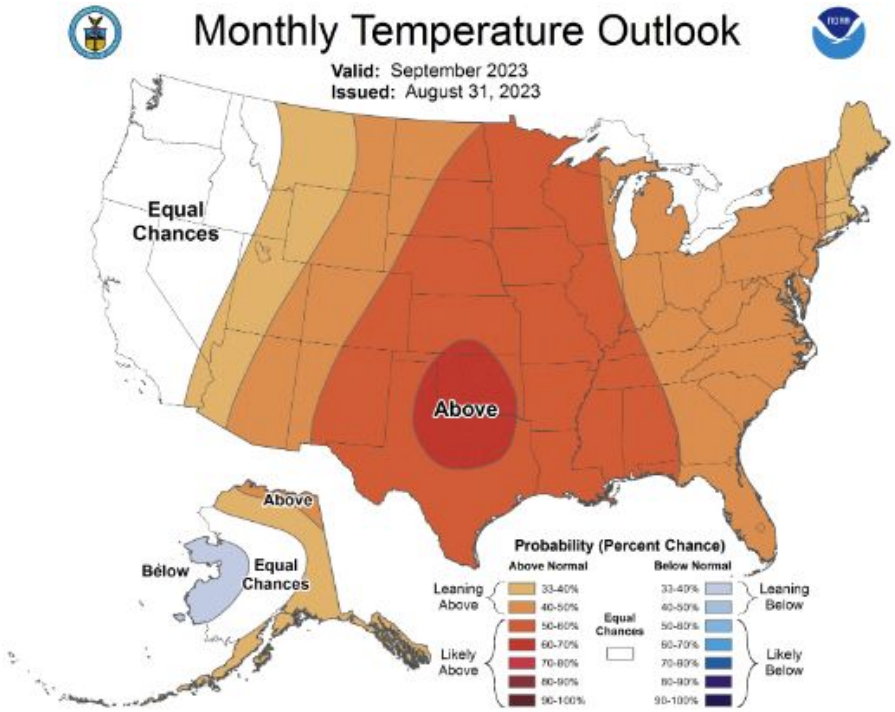
Precipitation



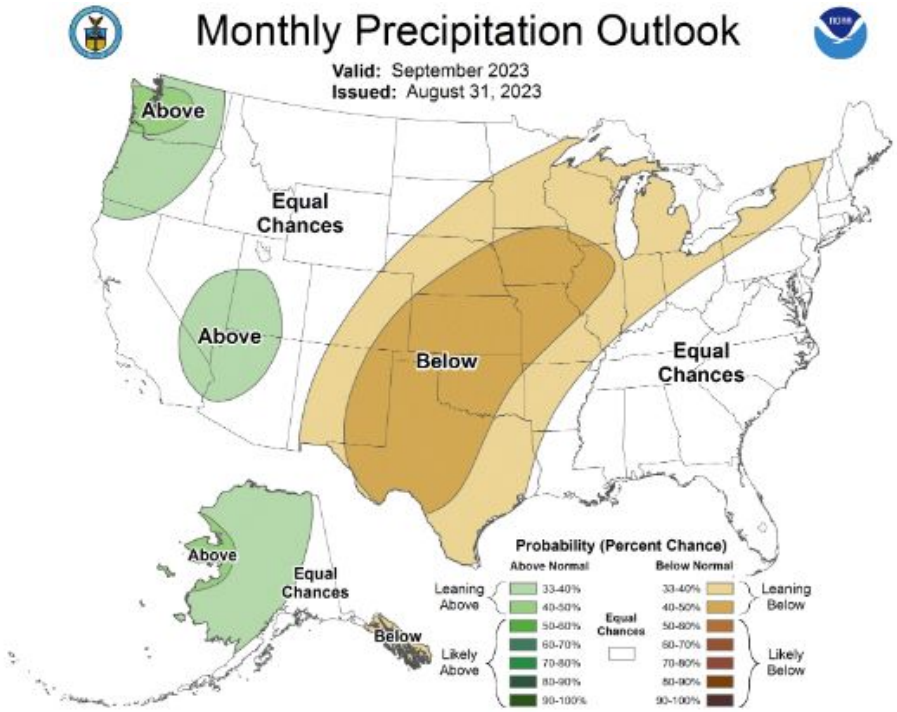
Courtesy of the Climate Prediction Center (www.cpc.ncep.noaa.gov)

One-Month Outlook: May 2022

Temperature



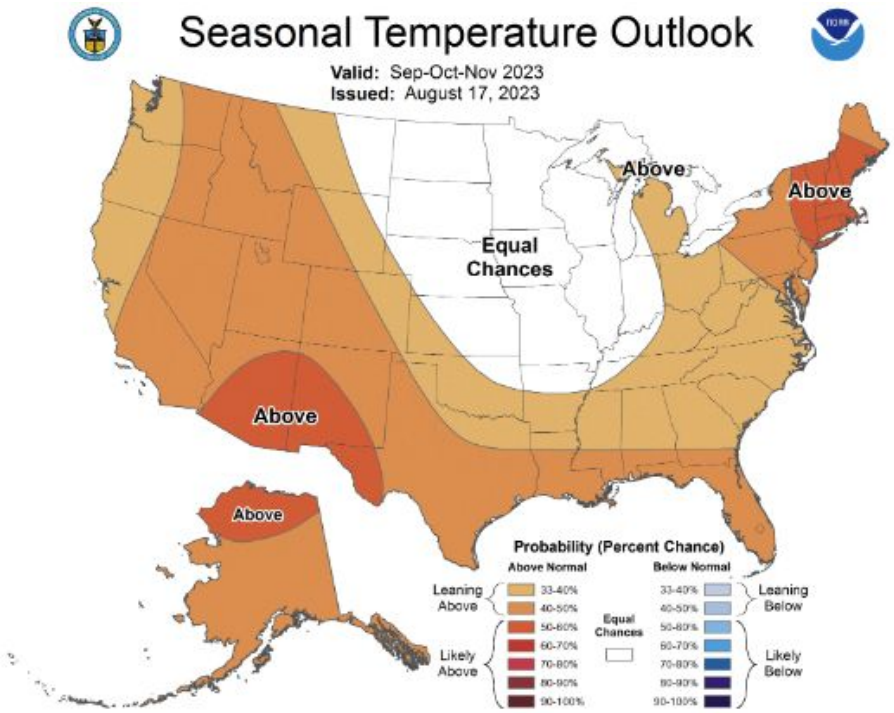
Precipitation



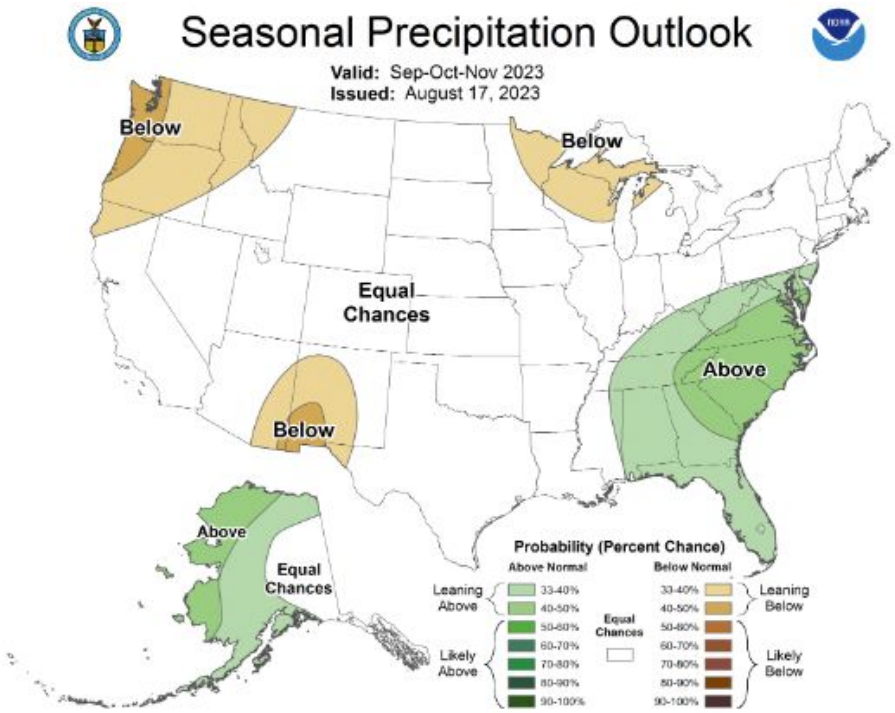
Courtesy of the Climate Prediction Center (www.cpc.ncep.noaa.gov)

Three-Month Outlook: May-Jun-Jul 2022

Temperature



Precipitation



Courtesy of the Climate Prediction Center (www.cpc.ncep.noaa.gov)